



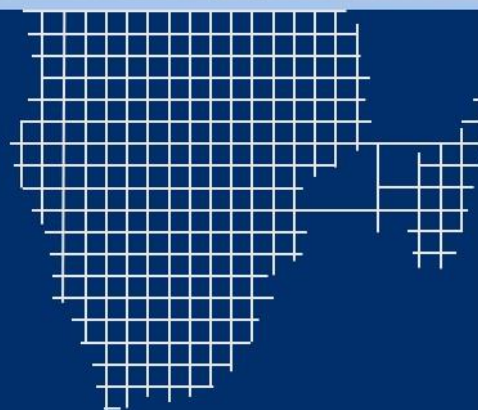
Southern Africa Energy Program

Year 2 Annual Report

1 October 2018 – 30 September 2019

Version 2.0

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COVER PHOTO: USAID SAEF

BioTherm Energy is developing the 32 MW Excelsior wind farm located in South Africa's Western Cape province. The wind project was part of the fourth round of the South African Renewable Energy Independent Power Producer Procurement Programme (REIPPPP).

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ACRONYMS

Acronym	Definition
ADER	Agence pour le Développement de l'Electrification Rurale
AEF	Africa Energy Forum
AfDB	African Development Bank
ANNA	Angola–Namibia
BERA	Botswana Energy Regulatory Authority
BPC	Botswana Power Corporation
BTG	Beyond the Grid
BW5	Bid Window 5 (of REIPPP Programme)
CENORED	Central Northern Regional Electricity Distributor (Namibia)
CEC	Copperbelt Energy Corporation
CEO	Chief Executive Officer
COR	Contracting Officer's Representative
CoW	City of Windhoek
CP	Cooperating Partner
CTT	Central Termica de Temane
DBSA	Development Bank of South Africa
DFID	UK Department for International Development
DIS	Development Information Solution
DOC	Development Outreach and Communications
DSM	Demand Side Management
DQA	Data Quality Assessment
E&S	Environmental and Socioeconomic
ECB	Electricity Control Board (Namibia)
EDM	Electricidade de Moçambique
EE	Energy Efficiency
EEC	Eswatini Electricity Company
EGENCO	Electricity Generation Company (Malawi) Limited
EMU	Electrification Management Unit
ENH	National Enterprise of Hydrocarbons
EOI	Expression of Interest
EPC	Engineering, Procurement, and Construction
ERB	Energy Regulatory Board (Zambia)
ESC	SAPP Environmental Subcommittee
ESCOM	Electricity Supply Corporation of Malawi
ESERA	Eswatini Energy Regulatory Authority
ESIA	Environmental and Social Impact Assessment

ESREM	Enhancing Sustainability of Regional Energy Markets
ETG	Energy Thematic Group
EWSC	Eswatini Water Services Corporation
EWT	Endangered Wildlife Trust
EXCO	Executive Committee
FC	Financial Close
FMM	Financial Mobilization Memo
FY	Fiscal Year
GCA	Grid Connection Agreement
GET FiT	Global Energy Transfer Feed-in Tariffs
GW	Gigawatts
GOGLA	Global Off-Grid Lighting Association
HICD	Human and Institutional Capacity Development
HRMSC	Human Resources Management Sub-committee
HRWG	Human Resources Working Group
IEE	Initial Environmental Examination
IFC	International Finance Corporation
IFI	International Financial Institutions
IPP	Independent Power Producer
IPP Office	South Africa Department of Energy (DoE) Independent Power Producer Procurement (IPP) Programme Office
IRP	Integrated Resource Plan
IsDB	Islamic Development Bank
IWaSP	International Water Stewardship Programme
JDA	Joint Development Agreement
KfW	Kreditanstalt für Wiederaufbau (German Development Bank)
KPI	Key Performance Indicator
kV	Kilovolt
LCOE	Levelized Cost of Energy
LEC	Lesotho Electricity Corporation
LEDs	Low Emissions Developments
LEWA	Lesotho Electricity and Water Authority
LOC	Letter of Collaboration
M&E	Monitoring and Evaluation
MCA	Millennium Challenge Account
MCC	Millennium Challenge Corporation
NERA	Malawi Energy Regulatory Authority
MIREME	Minister of Mineral Resources and Energy (Mozambique)
MITADER	Ministry of Land, Environment and Rural Development (Mozambique)
MITC	Malawi Investment Trade Centre

MME	Ministry of Mines and Energy (Namibia)
MNRE	The Ministry of Natural Resources and Energy
MW	Megawatts
NDA	Non-Disclosure Agreement
NEI	Namibia Energy Institute
NERSA	National Energy Regulator of South Africa
NORED	Northern Regional Electricity Distributor
OFID	OPEC Fund for International Development
OPC	Office of the President & Cabinet
OPIC	Overseas Private Investment Corporation
OSC	SAPP Operating Subcommittee
PA	Power Africa
PACO	Power Africa Coordinator's Office
PATRP	Power Africa Transactions and Reforms Program
PATT	Power Africa Transaction Tracker
PAU	Project Advisory Unit
PCCBIS	Portfolio Committee Capacity Building and Information Sharing Meeting
PIM	Project Investment Memo
PMEP	Performance Management and Evaluation Plan
PPA	Power Purchase Agreement
PPPC	Public Private Partnership Commission
PPZ	Partial Protection Zone
PS	Permanent Secretary
PV	Photovoltaic
Q1	Quarter 1
Q2	Quarter 2
Q3	Quarter 3
Q4	Quarter 4
QOS	Quality of Service
RE	Renewable Energy
REA	Rural Electrification Agencies
RED	Regional Electricity Distribution Company
REEEP	RE and EE Partnership
REFiT	RE Feed-in Tariff
REIPPP	RE Independent Power Producer Procurement
RERA	Regional Energy Regulatory Association
RFI	Request for Information
RFP	Request for Proposals
ROW	Right of Way

SACREEE	SADC Centre for RE and EE
SADC	South African Development Community
SAEP	Southern Africa Energy Program
SAPP	Southern African Power Pool
SAPP CC	Southern African Power Pool Coordination Center
SB	Single Buyer
SHS	Solar Home System
SIAZ	Solar Industry Association of Zambia
SMO	System Market Operator
SOW	Scope of Work
SPEED+	Supporting the Policy Environment for Economic Development
SPV	Special Purpose Vehicle
SRUC	USAID Sector Reform and Utility Commercialization Program
SSIR	SAEP Support Information Request
STTA	Short Term Technical Assistance
TIFF	Transmission Infrastructure Fund Facility
TNA	Training Needs Assessment
TO	Task Order
TOR	Terms of Reference
TTP	Temane Transmission Project
TTS	Targeted Transaction Support
U.S.	United States
USD \$	United States Dollar
USG	United States Government
USAID	United States Agency for International Development
USTDA	United States Trade and Development Agency
VAT	Value Added Tax
vRE	Variable Renewable Energy
WARMA	Zambia's Water Resource Management Authority
WB	The World Bank
YALI	Young African Leaders Initiative
ZESCO	Zambia Electricity Supply Corporation
ZPPA	Zambia Public Procurement Authority
ZTK	Zambia-Tanzania-Kenya Interconnector Project

TABLE OF CONTENTS

ACRONYMS.....	I
TABLE OF CONTENTS	V
LIST OF TABLES.....	VI
LIST OF FIGURES.....	VI
EXECUTIVE SUMMARY	I
I INTRODUCTION.....	4
1.1 The Program	4
1.2 Overview	5
2 MAJOR ACTIVITIES BY COUNTRY	8
2.1 Angola.....	9
2.2 Botswana.....	11
2.3 Eswatini.....	13
2.4 Lesotho.....	16
2.5 Madagascar	18
2.6 Malawi	21
2.7 Mozambique.....	26
2.8 Namibia	28
2.9 South Africa.....	31
2.10 Zambia	33
2.11 Regional.....	36
3 PROGRAM MANAGEMENT, FINANCE AND OPERATIONS.....	42
3.1 SAEP Program Management Office.....	42
3.2 Finance and Operations	51
3.3 Challenges and Risks.....	54
APPENDIX A SUCCESS STORIES	57
Eswatini Prepares to Increase Renewable Energy Generation.....	58
SAEP Helping Malawi Increase Domestic Generation	59
Malawi's Electricity Generation Company Embraces Gender Equality	60
The Temane Transmission Project is Taking Shape	61
SAEP Supports 26 Renewable Energy Projects to Financial Close.....	62
Sales Training Increases Solar System Sales and Connections In Zambia.....	63
Helping ZESCO Use Its Generation More Efficiently	64
APPENDIX B PERFORMANCE MONITORING & EVALUATION TABLES.....	65

APPENDIX C TRANSACTIONS TRACKER.....	79
APPENDIX D TRANSACTIONS REACHED FINANCIAL CLOSE.....	87
APPENDIX E PARTICIPANT TRAINING REPORT	90
Dashboard For Year 2 Results of all SAEP Organized Trainings	93
APPENDIX F ASSUMPTIONS FOR CALCULATION AND INVOICING OF FEE	95
Reconciliation of Disparate Program Calendars	95
Treatment of Quarterly and Annual Performance Targets.....	95
Recovering Fee in the Event of Underperformance in a Reporting Period	96
APPENDIX G STTA MOBILIZED AND TRAVEL TAKEN IN Q4 FY19	97
APPENDIX H ORGANIZATIONAL CHART & RESOURCES	102
APPENDIX I DETAILED ACTIVITIES PROGRESS.....	103
OUTCOME-SPECIFIC ACTIVITIES.....	103
PMO AND CROSS CUTTING-SPECIFIC ACTIVITIES.....	123
APPENDIX J SAEP YEAR 3 QUARTERLY TARGETS	131

LIST OF TABLES

Table 1: SAEP high-level results	6
Table 2. Cumulative impact targets by quarter for fee-based indicator, Program Year 2.....	96
Table 3. STTA mobilized during the period of 1 July 2019 to 30 September 2019	97
Table 4. SAEP Team travel between 1 July and 30 September 2019	98

LIST OF FIGURES

Figure 1. “BY THE NUMBERS” figures in Section 2 highlight generation and transmission projects by country with a medium or high probability of reaching financial close by March 2022.....	1
Figure 2. SAEP hosted the Annual SAEP Offsite in Pretoria, South Africa from 12 to 15 March 2019.	4
Figure 3: Overview of SAEP's major activities per country	8
Figure 4. SAEP and RNT meet in Angola, Luanda	10
Figure 5. Solar panels can provide heat and electricity for homes.....	11
Figure 6. SAEP and EWSC representatives study an irrigation pump station for vRE integration	13
Figure 7. SAEP discloses results from the EWSC Energy Saving Survey	15
Figure 8. Lesotho is currently increasing renewable generation through solar PV plants	17
Figure 9. ANKA's 60 kW mini-grid in Andavadoaka	18
Figure 10. YALI fellows conducting surveys in Doany.....	20
Figure 11. Kick-Starter Grant Winner Announcement Event on 19 July 2019 in Lilongwe.....	21
Figure 12. JDA signing for the Mpatamanga Hydropower Plant	22
Figure 13. Martha Murotho, EGENCO's only female engineer	23
Figure 14. ESCOM 400 kV operations training in Blantyre.....	24

Figure 15. EDM CEO, Aly Sicola, presents EDM's electrification strategy	27
Figure 16. Battery storage banks at the Tsumkwe plant in Namibia	28
Figure 17. Informal settlement outside Windhoek	29
Figure 18. Before-and-after construction of a turbine at Excelsior Wind Farm in the Western Cape, South Africa	31
Figure 19. The 10 MW Konkoonsies PV Solar Energy Facility is located on a 30-hectare site in the Northern Cape, South Africa	32
Figure 20. A SHS sales agent explains his product to customers	33
Figure 21. ZESCO is upgrading its power plants, but low water levels complicate their solution for load shedding. This penstock for the new 15 MW Lusiwasi power station, carries water from a canal down to a turbine house ..	34
Figure 22. Geoffrey Kaila, SIAZ Chairman, introduces the association to participants of the SIAZ launch held in Lusaka on 20 June 2019	35
Figure 23. SAEP attends the SADC Protocol on Energy workshop and the regional consultative meeting on the Regional Gas Master Plan in Windhoek in December 2018	37
Figure 24. SAPP Quality of Supply training	38
Figure 25. SAPP RE technology training	39
Figure 26. RERA's new e-module developed by SAEP focuses on regulatory governance	40
Figure 27. RERA e-module launch in Mauritius	40
Figure 28. SAEP marketing materials displayed during the Power Africa's 2019 Field Coordination Meeting in Johannesburg	44
Figure 29. Various social media posts from Power Africa and USAID Southern Africa	45
Figure 30. SAEP's LinkedIn Profile Banner	46
Figure 31. Examples of photos from SAEP's Communication Database	46
Figure 32. USAID Malawi announces the Request for Applications for the SHS Kick-Starter Program Grant event ..	47
Figure 33. One of two press releases from Year 2	47
Figure 34. SAEP's Transaction Advisory Services Fact Sheet	47
Figure 35. Video interview with Zuwa Energy, one of four SHS Kick-Starter grant winners	48
Figure 36. Gender Equality and Social Inclusion Workshop held at EGENCO	50
Figure 37. SAEP Pretoria office renovation	51
Figure 38. SAEP Team Christmas Party, 2018	52
Figure 39. SAEP Organizational Chart as of 30 September 2019	102

EXECUTIVE SUMMARY

In fiscal year 2019 (FY19), the second year of operation of the United States Agency for International Development (USAID) Southern Africa Energy Program (“SAEP” or “the Program”), over 100 activities in 10 countries¹ that contributed to Power Africa’s goals of creating a brighter, more sustainable future for many across the Southern African region were completed and advanced. This Annual Report (“the Report”) details SAEP’s successes from the past year; from transaction advisory support for large-scale energy sector projects to assistance to solar home system (SHS) companies and utilities on-grid extension. Below is an overview of SAEP’s key events, milestones, and achievements over the 12-month period (from October 1, 2018 to September 30, 2019) covered in this report.

- Facilitated **financial close of 135 megawatts (MW)** of new renewable energy (RE) generation capacity in South Africa and Malawi
- Achieved **232,705 connections** of which i) **149,198 were new off-grid connections** through support to SHS companies and other off-grid providers, and ii) **83,507 were new on-grid connections**
- Developed or revised **12 laws, policies, strategies, plans, and regulations** to improve the enabling environment and reduce barriers to energy sector growth
- Supported **21 off-grid energy companies and one on-grid company** across sub-Saharan Africa to improve market knowledge and increase sales through active transaction advisory and the development of go-to-market strategies
- Guided the Government of Malawi through the process of negotiating with the International Finance Corporation (IFC) and in finalizing the Joint Development Agreement (JDA) to develop the **350 MW Mpatamanga Hydropower** plant
- Supported the Mozambican electricity company, *Electricidade de Moçambique* (EDM), to design and operationalize a new **Electrification Management Unit (EMU)** – a key component of EDM’s implementation plan for the national electrification program aimed at ensuring all households in the country have access to electricity by 2030

FY19 SAEP NUMBERS



135 MW

Of New Renewable Energy Reached Financial Close



232,705

Connections Achieved



12

Laws, Policies, Strategies, Plans and Regulations Developed or Revised



47

Global Clean Energy Trainings Implemented



25

Transactions Advanced through Transaction Advisory Services

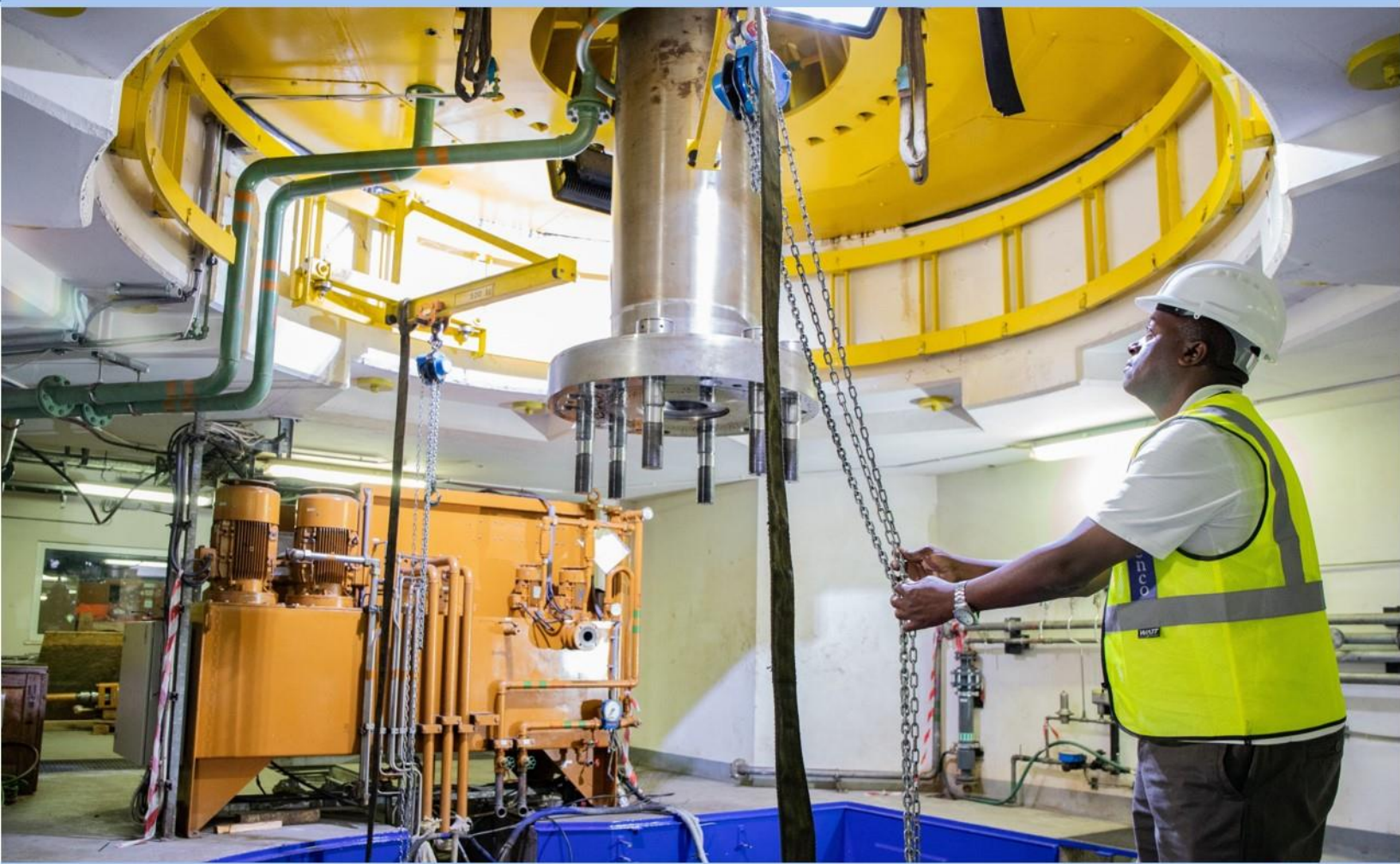
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Figure 1. “BY THE NUMBERS” figures in Section 2 highlight generation and transmission projects by country with a medium or high probability of reaching financial close by March 2022

¹ SAEP continues to not work in Zimbabwe per the guidance provided by USAID

- Managed key activities in moving Mozambique’s **Temane Transmission Project (TTP)** forward, including facilitation of engagements between the funders to finalize the project financing
- Launched the “**SHS Kick-Starter Program for Malawi**” and selected four SHS providers to receive a total of USD \$2 million in results-based grant financing
- Implemented **47 trainings** addressing topics like women leadership, SHS sales force effectiveness, and utility performance management



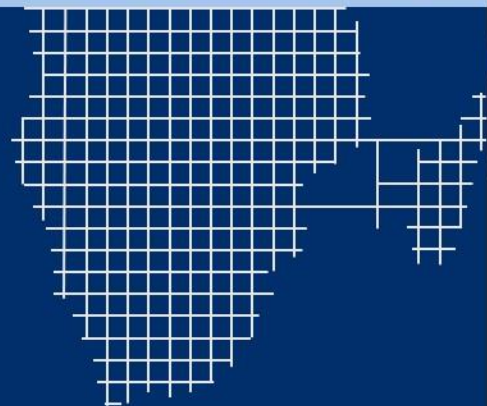
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I. Introduction

PHOTO: USAID SAEP

The inside of Tedzani III Hydropower Station's turbine. The majority of Malawi's hydropower generation is derived from the Shire River located south of Lake Malawi



I INTRODUCTION

I.1 THE PROGRAM

The SAEP contract (AID-674-C-17-00002) was signed between USAID/Southern Africa and Deloitte Consulting LLP (Deloitte) on 15 March 2017. This is SAEP's second Annual Report² and reflects results and achievements realized in Financial Year (FY) 2019 (October 1, 2018 to September 30, 2019).

The objective of SAEP is to increase investment in electricity supply and access in Southern Africa by strengthening the regional enabling environment and facilitating transactions. SAEP addresses key constraints to energy sector investment, by (1) strengthening regulation, (2) improving planning and procurement, (3) improving management of electricity trade, (4) demonstrating and scaling RE and energy efficiency (EE) technologies and practices, and (5) providing capacity building to institutions and human resources for energy sector management.



Figure 2. SAEP hosted the Annual SAEP Offsite in Pretoria, South Africa from 12 to 15 March 2019.

SAEP is USAID's flagship implementing mechanism for Power Africa in the Southern African region. As part of Power Africa, SAEP works to contribute to Power Africa's continent-wide goals of increasing new power generation by 30,000 MW and increasing new connections by 60 million by 2030. (For more information on Power Africa, see the box on the next page). Over its five-year life, SAEP will meet Program-specific goals to increase electricity supply and access, and will deliver:

- 3,000 MW of new power generation
- 1,000 MW of new transmission capacity
- 3 million new connections

² The full report name as per Contract Number AID-674-C-17-00002 is Annual Performance Management Progress Report

I.2 OVERVIEW

SAEP is a forward-looking program that aims to overcome the challenges of access to energy through actively advancing power sector development in Southern Africa. SAEP employs a proactive, responsive and flexible approach to the design, deployment and monitoring of interventions compatible with, and responsive to, the evolving needs of the region. SAEP recognizes that to sustainably advance the accessibility, reliability and security of the regional energy ecosystem, the Program must promote policy and regulatory reforms to improve the enabling environment. Additionally, the Program must stimulate private sector participation in the energy sector to realize new investment within the power sector.

SAEP is designed to increase electricity generation and to improve access to power in 11 countries located throughout Southern Africa³ while objectively quantifying and measuring progress towards five key outcomes or work streams of the Program. Outcomes include:

- Outcome 1 (OC1): Improve regulation, planning and procurement for energy
- Outcome 2 (OC2): Improve commercial viability of utilities
- Outcome 3 (OC3): Improve regional harmonization and cross-border trade
- Outcome 4 (OC4): Demonstrate and scale RE and EE technologies and practices locally
- Outcome 5 (OC5): Increase human and institutional capacity

SAEP will achieve these outcomes by strategically aligning energy reform and electrification goals with investment opportunities through i) tracking and working to close transactions, ii) coordinating with local and regional resources, and iii) building human and institutional capacity. SAEP is employing a results-oriented framework for decision-making related to the identification, prioritization, and selection of intervention activities and programming with the aim to increase and accelerate private sector investment and to move transactions forward for increased generation and access to electricity. On the following page, Table 1 shows targets and results for SAEP's Year 2 as well as targets moving forward into Year 3.

The rest of this document is organized as follows; Section 2 provides country level highlights of key successes and impacts as well as challenges and mitigation strategies implemented during the year. Section 3 details SAEP's program management, finance and operations, and challenges from Year 2 coupled with risks anticipated in Year 3. A series of appendices provide details on SAEP successes, Program staffing (short-term technical assistance (STTA) and resources mobilized), performance indicators and results, and progress reporting against SAEP Year 2 Work Plan activities. This includes completion of outputs and progress against the Work Plan activities, as well as any proposed adjustments to Program delivery.



Power Africa is a U.S. government-led partnership that brings together the collective resources of over 170 public and private sector partners to double access to electricity in sub-Saharan Africa. Power Africa's goal is to add more than 30,000 MW of new electricity generation capacity and connect 60 million new homes and businesses to power by 2030. To date, Power Africa has helped bring 124 power generation deals to financial close with a generation capacity of over 10,300 MW. These 124 deals are valued at over USD \$20 billion. Of these deals, 56 are operational and generating over 3,400 MW of new and more reliable electricity. Since its launch in 2013, Power Africa has connected 14.8 million homes and businesses to on- and off-grid solutions, bringing first time electricity to 68 million people across sub-Saharan Africa.

³ Angola, Botswana, Eswatini, Lesotho, Madagascar, Malawi, Mozambique, Namibia, South Africa, Zambia and Zimbabwe

Table I: SAEP high-level results

	Year 1 Target	Year 1 Results	Year 2 Target	Year 2 Results	Targets to Date	Cumulative Results Through End of Year 2	Variance Between Targets to Date and Results to Date	Reason for Under or Overachieving Target
Generation Capacity (MW) Reached Financial Close	325	2,130.38	352	135	677	2,265.38	+ 1,588.38	This target was exceeded mainly due to the 25 REIPPPP transactions with a total of 2,130.38 MW reaching FC in Year 1
Transmission Capacity (MW) Reached Financial Close	0	0	1,000	0	1,000	0	- 1,000	Delays on the Malawi–Mozambique interconnector project led to a change in the FC date
New Connections	50,000	64,412	400,000	232,705	450,000	297,117	- 152,883	The underachievement of the Year 2 set target can largely be attributed to the fact that the work SAEP is doing in Angola with ENDE will only produce results in Q1 of Year 3
Number of Laws, Policies, Strategies, Plans, or Regulations Officially Proposed, Adopted, or Implemented	6	7	8	12	14	19	+ 5	An increased demand from SAEP counterparts for services led to a more improved regulatory environment. Also, some of the counterparts were swift with their review and adoption of proposed policies
Number of People Receiving Training in Global Clean Energy	45	266	117	622	162	888	+ 726	The increase is tied to a high demand for training and capacity building activities from counterparts



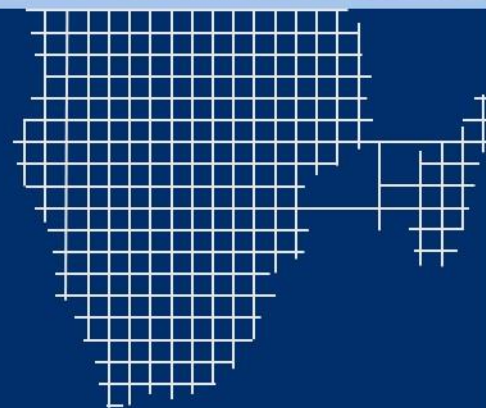
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2. Major Activities by Country

PHOTO: USAID SAEP

Solar battery systems are now competitive with off-grid diesel options, causing an explosion in their installation across Africa



2 MAJOR ACTIVITIES BY COUNTRY

In Year 2, SAEP initiated and implemented activities in 10 of SAEP's 11 focus countries: Angola, Botswana, Eswatini, Lesotho, Madagascar, Malawi, Mozambique, Namibia, South Africa, and Zambia. Pursuant to continuing guidance from the United States Government (USG), SAEP continues to delay the design and delivery of activities for Zimbabwe. Across the region, the Program collaborated with national ministries, utilities, transmission and distribution companies, regulators, cooperating partners, international financial institutions (IFIs), and private companies including Independent Power Producers (IPPs) and SHS providers. Figure 1 provides an overview of major Year 2 activity highlights by country.

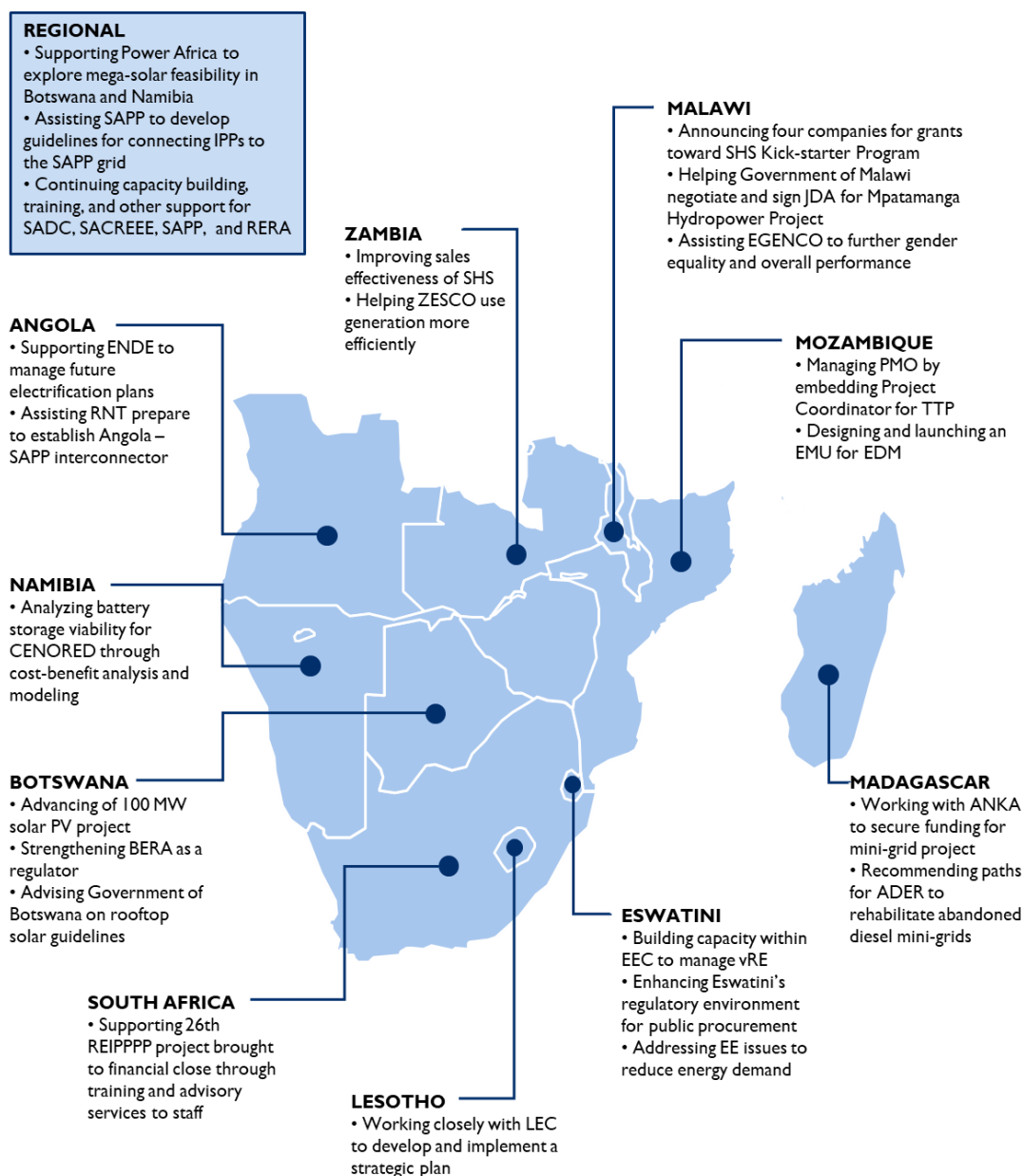


Figure 3: Overview of SAEP's major activities per country

2.1 Angola



Angola's current electrification rates are estimated at 43% in most cities and less than 10% in rural areas. The Government of Angola has set targets of 9.9 gigawatts (GW) of installed generation capacity and a 60% electrification rate by 2025.

BY THE NUMBERS



1,080,000

Projected Connections

As Angola opens up to the international donor community and looks to tackle electrification challenges, SAEP is excited to support the distribution company, *Empresa Nacional de Distribuição de Electricidade* (ENDE), to build and implement their electrification strategy, and the transmission company, *Empresa Rede Nacional de Transporte de Electricidade* (RNT), to develop the Angolan transmission backbone system. ENDE support will focus establishing an EMU so as to improve the distribution company's capacity to manage system expansion and the installation of an expected 1.2 million meters. For RNT support, SAEP will assist in the creation, operationalization and management of a Project Management Office (PMO) designed to oversee the design and construction of the Central-South transmission line as well as portions of the Angola–Namibia (ANNA) Transmission Interconnector project to interconnect Namibia and Angola. After extended engagements with ENDE and RNT in Angola in the last six months, SAEP activities and hands-on support are kicking-off in Year 3.

2.1.1 TOP ACHIEVEMENT AT A GLANCE

SAEP Teams with ENDE to Design PMO for Aggressive Electrification Plans

In an effort to extend access to 65% of the Angolan population currently living without electricity, SAEP is working with ENDE to improve their management capacity for grid expansion and meter installation. This will involve providing assistance towards the development and implementation of the kind of internal systems and processes required to effectively and efficiently install over 1.2 million prepaid meters in the coming five years, a target set by the Government of Angola. In Quarter 4 (Q4) of 2019, SAEP deployed a five-person team of specialists to conduct a Gap Assessment, engaging with ENDE's Senior Management and representatives from their Engineering, Commercial, Finance, and Procurement departments to better understand ENDE's current approach to, and capacity for, electrification. The Gap Assessment concluded that: i) ENDE has not undertaken any such large scale meter deployment program to date, and there are significant risks if ENDE moves forward depending solely on existing experience and processes, ii) ENDE's limited experience working with IFIs may jeopardize various potential IFI funding packages that are essential for ENDE to meet their aggressive metering program's targets. Building from Year 2 support, in Year 3 SAEP will establish an EMU within ENDE capable of managing the various system expansion and meter installation programs, while providing *ad hoc* advisory services to secure IFI funding. A Letter of Collaboration (LOC) and Scope of Work (SOW) should be finalized in October 2019, which is expected to yield approximately 1,000,000 connections by 2022. SAEP expects to have a 10-person team assisting ENDE to manage its electrification plans.

SAEP Strengthens RNT's Capacity to Construct Transmission Backbone

Currently, the Angolan power system comprises four isolated transmission networks: Northern, Central, Southern and Eastern. RNT has the mandate to implement a national transmission backbone, which includes connecting the Central to the South system with a 400-kV line of approximately 350 km from Huambo to Lubango. Resources at utilities like RNT are often thinly stretched across various activities. This leads to RNT having more projects stuck in development phase, without the required full-time-equivalent resources capable of delivering them, resulting in project delays. The PMO aims to improve project governance, reporting, standardization of processes, and project management capabilities.

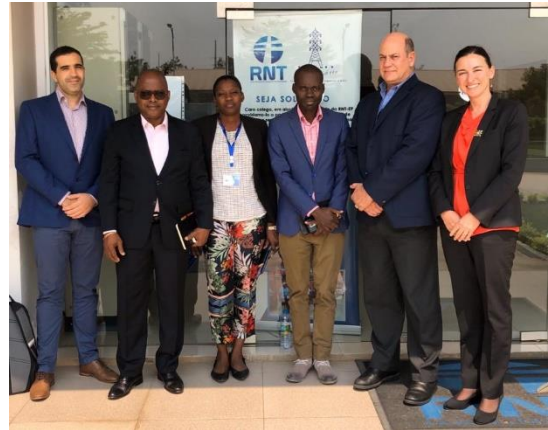


Figure 4. SAEP and RNT meet in Angola, Luanda

Throughout Year 2, SAEP engaged with RNT to agree on the scope of assistance. On 30 September 2019, RNT signed the SAEP LOC. In Year 3, SAEP will support RNT in: i) the establishment of a PMO with a dedicated RNT team to manage the development of the Angolan Central–Southern transmission system between Huambo and Lubango, ii) training for RNT personnel to operate in an interconnected system when they interconnect to the Southern African Power Pool (SAPP) via the Namibia interconnector, and iii) general advisory services on transmission projects. SAEP's successful support to RNT PMO will help establish an Angolan transmission backbone system and the interconnector of Angola to the SAPP system.

2.2 Botswana



Botswana relies on electricity imports to meet demand, despite having considerable natural resources (solar, coal, and coalbed methane) that – if tapped – could drive generation in amounts sufficient to power Botswana and to export throughout the region. However, the country has faced challenges as it works to expand coal-fired generation, has limited experience with solar and does not have an Integrated Resource Plan (IRP), which affects its ability to implement sustainable on- and off-grid energy generation capacity. Lastly, Botswana has a new regulator with a rapidly growing skillset that is working towards increased participation of private sector players in the power sector.

BY THE NUMBERS



100 MW
Pending Financial Close



5
Laws/Policies Proposed/Revised

.....

In Year 2, SAEP i) worked to advance the 100 MW solar photovoltaic (PV) project, ii) strengthened the Botswana Energy Regulatory Authority (BERA) as it continues forward from formation in September 2017 to regulate the power market and introduce competition, and iii) advised the Government of Botswana to investigate the benefits of self-generation through rooftop solar technology.

2.2.1 TOP ACHIEVEMENTS AT A GLANCE

Developing Botswana's Rooftop Solar Guidelines in Record Time

In April 2019, the Minister of Energy, Sadique Kebonang, requested a final guideline to be ready by the end of June 2019. The process involved various workshops with BERA and the Botswana Power Corporation (BPC), as well as stakeholders from the solar industry, academia and the engineering community, to gather input on the policy issues requiring key decisions to develop the guidelines. With hands-on support from SAEP, a Department of Energy (DOE) Working Group succeeded in finalizing the guidelines on 5 June 2019 – well in advance of the 30 June 2019 target date.



Figure 5. Solar panels can provide heat and electricity for homes

The guidelines will enable electricity consumers in Botswana to self-generate electricity via rooftop solar (PV) technologies of up to 1 MW (5 kW for residential consumers and up to 1 MW for Commercial & Industrial) and sell excess power produced to the BPC. The initiative will help to stimulate the clean energy sector in Botswana, add capacity and help to reduce the country's domestic power supply deficit.

SAEP also developed a 90-day implementation plan detailing the actions that the Botswana stakeholders, primarily BERA and the BPC, will need to complete to fully implement the guidelines. The guidelines have since been approved and are expected to be fully operational by 1 January 2020. Once effective, the guidelines should result in 10 MW of rooftop solar within a few years.

2.2.2 ADDITIONAL HIGHLIGHTS FOR BOTSWANA

In Year 2, SAEP engaged in the following additional activities:

- Since beginning operations in September 2017, BERA has received ongoing operational and regulatory support from SAEP. In Year 2, BERA requested assistance with corporate governance and organizational restructuring in order to enhance its efficiency and effectiveness in the execution of its regulatory mandate. After a series of discussions and workshops with the leadership team, SAEP developed a new organogram that ensures that it is equipped to perform its mandate in accordance with the BERA Act, 2016. BERA has agreed to the preliminary organizational options. SAEP will deliver the final organizational structure, the placement of existing positions in that organizational structure, and an evaluation of which unfilled positions should be filled and placed in the new organizational structure by the end of October 2019. The proper reorganization of BERA is essential as the regulatory pursues its mandate to attract private sector players to Botswana's energy sector
- Since Year 1, SAEP has provided essential ongoing support to BPC in the pursuit of its 100 MW solar PV procurement. In March 2019, the Ministry of Minerals, Energy and Water required a change in the ownership structure of the project – instead of a joint venture, the project will now be 100% developer-owned. Thus, BPC had to start with a new procurement process. SAEP has therefore shifted its support to the new Request for Qualifications (RFQ). The RFQ was released on 1 August 2019 and closed on 30 September 2019. In Year 3, SAEP will refocus efforts on the 100 MW procurement through a revised project development model focused solely on private-sector ownership and limited financial government support. The 100 MW solar project is poised to serve as Phase I of the proposed Mega-Solar initiative⁴

⁴ As SAEP's support on the Mega-Solar initiative covers both Botswana and Namibia, information on that activity can be found in Section 2.1.1 covering regional activities

2.3 Eswatini



The Kingdom of Eswatini (formerly Swaziland) is a landlocked country and depends on South Africa to supply nearly 80% of its power needs. To reduce power reliance from South Africa, the Government of Eswatini has the target to produce generation sufficient to meet 100% of domestic power demand by 2034 largely through expanding generation from RE sources.

In Year 2, SAEP's efforts were focused on building capacity within the national power utility, the Eswatini Electricity Company (EEC) for managing variable renewable energy (vRE), and enhancing the country's regulatory environment in preparation for ongoing and future IPP procurements, and addressing EE issues to reduce energy demand in the country.

BY THE NUMBERS



55 MW

Pending Financial Close



5

Laws/Policies Proposed/Revised

2.3.1 TOP ACHIEVEMENTS AT A GLANCE

Assessing the Impacts of vRE Integration on the Eswatini Grid

The Government of Eswatini aims to increase the share of renewables in the country's electricity mix to 50% by 2030. For Eswatini to consider such a sizeable portion of its generation coming from vRE, the EEC needed to understand the challenges utilities face when integrating vRE into the national grid. SAEP worked with EEC staff to conduct an impact assessment and developed a tool for making national policy decisions on how much more vRE generation – especially solar PV – can be integrated to meet demand. The support has enabled the EEC and other sector players to make essential decisions on new vRE projects to supply the grid.

The results of the impact assessment show that the maximum penetration levels are between 115 MW in 2021 and 155 MW in 2030. Of these, 65% is solar PV and 35% is wind. EEC employed an SAEP-developed framework to evaluate different scenarios, each simulating system behavior in response to loss of generation in the presence varying levels of vRE integration. For each scenario, the framework generated the frequency conditions needed to avoid system failure. Because of SAEP's assistance, the Government of Eswatini can more confidently implement its generation expansion plan, which prominently features solar PV. In June 2019, Eswatini awarded a contract to build the 15 MW Lavumisa solar plant and called for bids to build an additional 40 MW capacity using solar PV technology. *For more details on support to EEC, refer to the success story section in Appendix A.*



Figure 6. SAEP and EWSC representatives study an irrigation pump station for vRE integration

Enhancing Eswatini's Regulatory Environment for Public Procurement

Pursuing efforts to expand domestic RE generation, in June 2019, the Eswatini Energy Regulatory Authority (ESERA) issued an RFQ for the competitive procurement of 40 MW new generation capacity in Eswatini. This represents the first tranche procurement program of solar PV to be followed later by a second tranche for ~40 MW of biomass. This procurement is aligned with the Ministry of Natural Resources and Energy's (MNRE) Energy Master Plan and Short-Term Generation Expansion Plan.

As per the MNRE's request, SAEP assisted with the development of procurement regulations critical in guiding the procurement program so that government can move forward and meet its energy goals. SAEP has completed a first draft of the procurement regulations. Once the draft is finalized, MNRE will commence the process of engaging the Attorney General's Office for processing the regulations through Parliament.

2.3.2 ADDITIONAL HIGHLIGHTS FOR ESWATINI

In Year 2, SAEP was engaged in the following additional activities:

- On 13 February 2019, the ESERA Board adopted the EEC Rate Case recommendation prepared with SAEP's advice and support. One highlight was that through this process EEC advanced their skills to calculate the cost of capital, including analyzing country risk, which was adopted by the EEC Board. Separately, SAEP finalized a paper detailing lessons learned and recommendations from the Rate Case for ESERA's use when completing future rate cases. The paper provides proposals on how to improve rate case processing and includes both substantive and procedural recommendations. The new rates authorized by ESERA were theoretically meant to go into effect on 1 April for the EEC; however, a directive from the Eswatini Prime Minister was issued stating that there would be no changes in electricity rates (among other items) until the country's economy improves. SAEP will closely follow happenings in Eswatini to see if further assistance is required as the country moves out of its current economic challenges
- At ESERA's request, SAEP completed a review of Eswatini's Connection Charge Guidelines in April 2019. The guidelines established a standardized approach for dealing with electricity network connections and associated connection charges for end user customers that will enable the country to achieve its national energy objectives. In the first week of September 2019, ESERA Regulation Manager, Mr. Simphiwe Khumalo, confirmed that ESERA Executive Committee had approved the new Guidelines and will propose the revised Guidelines to the ESERA Board by the end of October 2019 for adoption and transmittal to the EEC for implementation

- SAEP supported the Eswatini Water Services Corporation (EWSC) to undertake an EE audit to identify opportunities for reducing electricity costs of water supply, which represents about 20% of the total cost of water storage, treatment and distribution throughout Eswatini. In June 2019, SAEP held inception meetings, inspected several EWSC sites, and conducted an Energy Management Workshop where 32 participants from EWSC discussed SAEP's preliminary findings and recommendations. After the workshop, EWSC immediately implemented several SAEP short-term recommendations, including the appointment of an Energy Management Team that began to review operational practices aimed at reducing electricity costs, especially at pump stations. EWSC's immediate positive response and sustained high-level engagement demonstrates the seriousness of the challenge that confronts EWSC and their appreciation for SAEP's intervention. As a result, EWSC stands to save approximately USD \$85,000 within a year (without any capital expenditure) by adopting SAEP's immediate term recommendations, which translate to a demand reduction of 570 kVA. EWSC expects the energy savings and capacity reduction from the EE program to reduce total supply costs by at least USD \$400,000 if all the proposed initiatives are adopted; an optimistic reduction of 970 kVA and an energy saving of 200 MWh can be realized if all the opportunities are implemented⁵. This will reduce the EWSC's costs to deliver water to poorer populations. In Year 3 SAEP will support EWSC to implement the priority recommendations



Figure 7. SAEP discloses results from the EWSC Energy Saving Survey

⁵ The quantification of the energy and demand savings have to be verified through detailed analysis and metering.

2.4 Lesotho



Lesotho's generation, transmission, and distribution are all managed by the Lesotho Electricity Company (LEC), the country's fully integrated electric utility responsible for the government mandate to sustainably manage the grid and its associated assets. The majority of Lesotho's generation comes from imports from South Africa and the 72 MW Lesotho Highlands Water Projects, as well as some RE projects.

In Year 2, SAEP continued to provide operational support to LEC through the development and adoption of a new strategic plan.

BY THE NUMBERS



50 MW

Pending Financial Close



Laws/Policies Proposed/Revised

2.4.1 TOP ACHIEVEMENTS AT A GLANCE

Helping LEC with Strategic Planning and Financial Accountability

LEC approved their strategic plan on 5 July 2019 and as a result, has focused funding on achievable priority projects. In recognition of its own limited strategic planning capacity, LEC asked for assistance to build a five-year plan that would improve the utilities' performance and help it to hit its goals. In 2018, SAEP provided guidance to the LEC's new Board, Managing Director and Senior Management Team on the development of a strategic plan to transform the company, focusing on adding renewable generation and increasing connections. The focus of the assistance was to help the utility to build a plan that had initiatives with budgets and direct linkages to the company's fiscal strength.

SAEP submitted the strategic plan to the LEC in December 2018 after which the Board of Directors expressed their sincere appreciation for SAEP's "essential role" in the plan's development. The plan is being used to align the executive team to the strategic goals and objectives of the LEC. SAEP will continue to provide technical assistance to the utility to ensure effective implementation of the plan.

2.4.2 ADDITIONAL HIGHLIGHTS FOR LESOTHO

In Year 2, SAEP engaged in the following additional activities:

- SAEP received the mandate from the Government of Lesotho to be their advisors on technical, legal and commercial matters with respect to various privately financed renewable generation projects. The initiation of this engagement was significant given the fact that at present Lesotho does not have any privately financed power generation or transmission projects, and these projects can have a highly beneficial impact on the country's economic and social development. SAEP has been engaging with project developers of the following project: 20 MW NEO I, 30 MW Mohale's Hoek, and 40 MW Mazenod solar PV plants

- SAEP continued to support the LEC on completing its ring-fencing project, a regulatory condition that has been required of LEC by the regulator. The LEC asked SAEP to act as the utility's independent advisor as they manage MRC Consulting, who were contracted by LEC to implement the work. SAEP reviewed MRC's Inception Report and Cost Allocation Manual as well as MRC's progress reports. Completion of the ring-fencing exercise will result in individual accounts and income statements for each functional area (transmission, distribution, and supply) by November 2019, improving likelihood for LEC's tariff requests that were previously reduced due to lack of account/income compliance



Figure 8. Lesotho is currently increasing renewable generation through solar PV plants

2.5 Madagascar



In 2015, the Government of Madagascar adopted the New Energy Policy (NEP), which sets an ambitious target to increase household access to electricity from the current 15% to 70% by 2030. The government is dedicated to using the country's RE potential and to attracting private investment to achieve this target. The Malagasy grid – run by the state-owned utility, Jirama – covers only a small portion of the country and is focused around the capital, Antananarivo, and the coastal city of Tamatave. The remainder of the country depends upon micro-grids spread across the country and SHS. Given the low electrification rate, Jirama's limited reach, and the remoteness of some parts of Madagascar, there is significant potential to support a decentralized approach to electrification.

BY THE NUMBERS



198 MW
Pending Financial Close



8,301
Actual Connections



90,888
Projected Connections

.....

In Year 2, SAEP completed assessments of electrification approaches in the SAVA region and the viability of hybridizing diesel mini-grids in areas overseen by the rural electrification authority, *Agence pour le Développement de l'Electrification Rurale (ADER)*.

2.5.1 TOP ACHIEVEMENTS AT A GLANCE

Off-Grid Developer Secures Funding for Mini-Grid Project

ANKA Madagascar, a mini-grid developer, has secured funding to begin building and operating mini-grids in 54 different villages in southern Madagascar. The project is the result of a national call for tenders that ANKA won in 2018 in part due to SAEP's prior support in building a robust project finance model for use in tender submissions, identifying fundraising needs, and securing private investment. Project construction is expected to begin in December 2019, where ANKA aims to produce, distribute, and sell electricity to rural communities. Focus will be on productive uses, especially agricultural processing activities and small industry, in order to create added value at the local level and thus boost the increase in purchasing power. As a result, an estimated 11,000 household connections are expected in the next seven years, impacting the lives of over 52,000 people.



Figure 9. ANKA's 60 kW mini-grid in Andavadoaka

SAEP will continue to work with ANKA as they carry out the development of these mini-grid sites, and also on increasing the company's visibility in the international market as they work to reach financial close on the remaining mini-grid projects.

Recommendations to ADER for Rehabilitating Abandoned Diesel Mini-Grids

ADER, Madagascar's rural electrification authority, is working to rehabilitate four diesel mini-grid sites initially supported by ADER in the early 2000s but now abandoned. SAEP was approached by ADER with the request to investigate what the requirements would be to resurrect the two sites using hybrid (diesel and solar) generation.

In December 2018, SAEP deployed Madagascar-based Young African Leaders Initiative (YALI) fellows to complete “ability and willingness to pay” surveys in the towns of Mandoto and Anjiaja, where two of the four abandoned diesel mini-grid concessions are located – the survey results from the two grid locations were used to make assumptions about the remaining two. The results suggested that most customer disconnections to the mini-grids were not due to an inability to pay, but rather due to the poor quality of supply. The generation and distribution infrastructure had been allowed to deteriorate over time, causing an increase in customer appliance failure. As such, although customers had the *ability* to pay, the survey found that the *willingness* to pay would depend on an improvement in the quality of supply, and ADER must make significant infrastructure upgrades if they choose to rehabilitate the mini-grids.

As a result of the survey findings, SAEP undertook an assessment of options for rehabilitating the four mini-grids ADER had prioritized, including a critical assessment to help ADER understand factors of a competitive solar panel introduction. The assessment found that there is a case for rehabilitation at all four sites and recommended the appropriate technology mix that ADER could pursue in this effort. Next steps will include ADER requesting and receiving approvals from the Ministry of Energy for the termination of existing contracts at the sites and calling for competitive bids for new operators. In Year 3, SAEP expects to support ADER through this process in the hopes of facilitating these new connections and significant new clean energy generation.

2.5.2 ADDITIONAL HIGHLIGHTS FOR MADAGASCAR

In Year 2, SAEP engaged in the following additional activities:

- SAEP supported Themis in their capital raise for a 100 km transmission line needed to connect to the Malagasy grid a proposed 192 MW hydro plant in Southern Madagascar. This transmission line will allow for the additional generation capacity to be connected to the grid and for several new connections to communities close to the line. During Quarter 3 (Q3), SAEP drafted a funding roadmap that highlights the approach Themis should follow to raise funds for the ancillary infrastructure. In addition, SAEP supported Themis in finalizing a Request for Expression of Interest. This document has been shared with all identified lenders to help them determine if they are interested in engaging with the project. In addition, in June 2019, SAEP provided Themis with a contact list of identified lenders to approach as well as the project teaser document and introductory language to be used. This support has enabled Themis to follow through with engagements with lenders
- In Quarter 1 (Q1), SAEP conducted willingness and ability to pay survey in the SAVA region. The survey was supported by three YALI alumni based in Madagascar and covered the villages of Doany, Ambalihabe and Befamatra. Over 200 households participated in the survey, with the findings indicating that the residents in the region have both a willingness and a capacity to

purchase SHS, and that there is already a high penetration of SHS in the area. In addition to the survey, SAEP completed a report on the state and potential of the SHS market in the SAVA region to assist a vanilla growers' cooperative, AVOTRA, in making decisions about entering and competing in the SHS market in the SAVA region. The association is interested in diversifying their income and protecting themselves from the volatile price of vanilla. The market assessment showed that although there is a small addressable market, the current SHS products in the area are of a low-quality, and there is an opportunity for AVOTRA to bring in higher-quality products and offerings with improved operation and maintenance support. SAEP is currently reaching out to SHS operators to introduce the opportunity of partnering with AVOTRA in Doany to sell their products



Figure 10. YALI fellows conducting surveys in Doany

- SAEP completed an initial assessment of sustainable self-generation options for Jirama's commercial and industrial customers, including healthcare facilities. Jirama is currently not able to supply the continuity and quality required to run their operations effectively and, as part of an arrangement with the government, are receiving subsidies to generate their own electricity during supply unavailability periods. This work is a product of a request made by the Ministry of Energy on 11 April 2019. The ministry and the government have prioritized limiting government subsidies and alleviating Jirama's supply shortfall immediately. SAEP has mobilized a team to continue with the site-specific aspects of the work, which include stakeholder interviews, and is working with the U.S. Mission in Madagascar to advance the activity in Year 3

2.6 Malawi



With a population of around 18 million and domestic generation capacity of only 439 MW, Malawi experiences electricity shortages regularly, with load shedding sometimes exceeding eight hours per day during the dry season. As the population continues to grow, the electricity supply/demand gap will only worsen unless remediation mechanisms are not put in place.

In Year 2, SAEP continued to work closely with the Government of Malawi and the private sector to move generation projects forward so as to bring power online. Focus areas included i) support to the Malawi Energy Regulatory Authority (MERA) on reviewing ESCOM's tariff application; ii) Monitoring and Evaluation (M&E) support to the Electricity Generation Company (Malawi) Limited (EGENCO) for the operationalization of the utility's 15-year (2018–2033) Strategic Plan; iii) transaction advisory services to the Government of Malawi on the 350 MW Mpatamanga Hydropower Project; and iv) launching the SHS Kick-Starter Program, which will catalyze at least 134,000 connections through results-based funding and operational support.

BY THE NUMBERS

 **60 MW**
Reached Financial Close

 **399 MW**
Pending Financial Close

 **11,564**
Actual Connections

2.6.1 TOP ACHIEVEMENTS AT A GLANCE

USAID Awards USD \$2 million to Solar Home System Industry in Malawi

In July 2019, SAEP announced the four Malawian and international companies that qualified for results-based financing grants under the USAID “Solar Home System Kick-Starter Program for Malawi.” The winning companies from a field of 20 were SolarWorks! Vitalite, Yellow Solar, and Zuwa Energy. The awards, totaling USD \$2 million, helped the companies secure an additional USD \$4 million in working capital loans as support from local and international financial institutions. The Kick-Starter is expected to deliver basic electricity access to about 134,000 households across Malawi by March 2021. Prior to the launching the Kick-Starter, SAEP supported SHS companies with route-to-market tools and information, leading to more than 5,000 connections in Year 2.

The Kick-Starter Program is the result of collaboration between a range of stakeholders, including the Government of Malawi, local private-sector financiers (FDH Bank, Kuwa Capital, National Bank of Malawi

“USAID’s financial and operational support will revolutionize affordable household electricity access across Malawi”
Michael Heyink, CEO of Yellow Solar



Figure 11. Kick-Starter Grant Winner Announcement Event on 19 July 2019 in Lilongwe

and, Standard Bank), international private-sector financiers (Lion's Head Global Partners and SunFunder) and awareness-raising institutions (SolarAid and EnDev). By building this coalition, the Kick-Starter is providing a holistic approach to supporting the SHS sector.

Joint Development Agreement Signed for 350 MW Mpatamanga Hydropower Plant in Malawi

Mpatamanga, a 350 MW peaking hydropower project on the Shire River, is central to the Government of Malawi's strategy for expanding the country's generation capacity, and, in Year 1, the government asked SAEP for guidance as they entered into negotiations with the IFC to bring the project into reality.

On 12 April 2019, the Government of Malawi and the IFC signed a JDA, a major milestone that cleared the way for the government to move forward with project development and public tender design. SAEP had supported the government to negotiate the JDA. The Mpatamanga hydropower project is the largest such development in Malawi, and the country's IRP accords it the highest priority. This speaks to the importance of the project to Malawi's social and economic development.

Together with SN Power as specialist developer, the IFC has funded and completed the additional studies and diligence reports required to make the project bankable. All parties specifically focused on comprehensively addressing and prioritizing potential environmental and social concerns, and completed detailed analysis demonstrates the project's environmental feasibility. In parallel, IFC and the government have developed a financing plan for the project, which is expected to include substantial financing from the World Bank's International Development Association and a term sheet for senior debt from IFC.



Figure 12. JDA signing for the Mpatamanga Hydropower Plant

SAEP continues to support the government in moving the project forward, and the public tender for a project developer will be launched in November 2019. The procurement process will feature a one-stage RFP to identify a preferred bidder by March 2020. Financial close is estimated by 31 December 2021. *For more details on support to the Mpatamanga Hydropower Project JDA signing, refer to the success story section in Appendix A.*

Malawi's Electricity Generation Company Improves Overall Performance

SAEP is assisting EGENCO to become a leading organization and work to hit their strategic goals to be the number one talent experience in Malawi. As William Liabunya, the EGENCO CEO, works to transform the organization, SAEP assisted him to codify this message through a video to share across the organization. This change program includes:

Gender and Social Inclusion: To address the request by EGENCO for assistance in promoting gender and social inclusion within the utility, SAEP identified specific gender equality challenges and gaps and, based on these gaps, designed activities to develop women's leadership skills and ultimately promote and retain women in leadership roles within the utility. SAEP's activities proved effective as major gender mainstreaming shifts are now taking place. Changes include: i) EGENCO formed an interdivisional Gender Task Force responsible for creating awareness campaigns, identifying possible gaps and the continuously promoting gender equality, ii) the utility hired its first female director as the Corporate Affairs Director and Company Secretary, iii) the woman placed in the HR Officer position has been promoted to Senior Administration and Gender Manager responsible for heading the Gender Unit, and iv)

“There is definitely a future for women in EGENCO. Most of the problems we face have to do with mindsets. EGENCO and SAEP help to change the mindsets of men to accept us.”

Martha Murotho, EGENCO Engineer

Martha Murotho, EGENCO's only female engineer, was moved from a role as Plant Operations Technician to a role as Assistant Control Engineer at the Generation Control Centre, and is the first female engineer to operate the control room. For more details on support to EGENCO's gender mainstreaming, refer to the success story section in Appendix A.



Figure 13. Martha Murotho, EGENCO's only female engineer

Effective Management of the Utility: Responding to EGENCO's need to develop its capacity, information management, and performance monitoring to achieve the objectives of its strategic plan, SAEP assisted EGENCO's Board and Executive Management to develop and implement i) a performance M&E process, ii) key performance indicators (KPIs), and iii) an organizational structure. SAEP's direction led to the establishment of the M&E Department and the development of a balanced scorecard to track objectives from EGENCO's Strategic Plan. The plan focuses on improving the utility's commercial performance and adding 1,000 MW over the 10-year planning horizon.

“We again thank you for your support to EGENCO and I hereby pledge that we will use your support for the good of our company and the generation sector in the country.”

William Liabunya, CEO of EGENCO

2.6.2 ADDITIONAL HIGHLIGHTS FOR MALAWI

In Year 2, SAEP engaged in the following additional activities:

- ESCOM is preparing to deploy the Mozambique–Malawi Regional Interconnector Project, a 1,000 MW capacity, 400 kV project that will connect the transmission systems in Mozambique and Malawi, allowing the two countries to engage in bilateral and regional power trade in the SAPP. The World Bank has approved a total of USD \$57 million for the project and the Interconnector is anticipated financial close in late 2019 or early 2020. SAEP has been advising both the Malawi and Mozambican utilities on various aspects of the interconnector. SAEP's critical contribution to this preparation has been transforming ESCOM's operational capabilities so it can operate this massive interconnected system.⁶ In February 2019, SAEP provided technical training to ESCOM operations and maintenance staff on how to safely operate and maintain the infrastructure. Later in July 2019, this effort included the development of a training needs assessment for ESCOM for maintaining not only the Malawi-Mozambique Interconnector but also the newly commissioned Phombeya–Nkhoma line. As the World Bank and EDM finalize funding for the Malawi-Mozambique Interconnector it is critical that ESCOM personnel gain expertise to make the system successful, and SAEP will continue to provide maintenance training in Q1 of Year 3
- SAEP developed a Production Optimization tool for ESCOM and concluded the training of its operational personnel. The tool is needed to optimize costs and includes both the supply- and demand-side aspects of production optimization. ESCOM's System and Market Operations team took ownership of the Production Optimization Tool in September 2019 and is already using the tool to optimize production costs. SAEP will help integrate the Production Optimization Tool into SCADA and other operations in Year 3
- The MERA Board reached a decision on 1 October 2018 to grant ESCOM a 31% tariff increase for the four-year period. The new tariff makes ESCOM a utility that has sufficient funds to attain cost recovery. In response to MERA's request, SAEP advised MERA throughout the ESCOM's base tariff application review process. At the heart of SAEP's assistance was helping to build MERA's capacity and empower them to confidently review the filing following international leading practices. The SAEP point of contact at MERA was Eunice Potani, Director of Economic Regulation. In February 2019, Ms. Potani moved to a new role as CEO at the Utility Regulatory Authority in Mauritius and applied SAEP's MERA rate case lessons learned documentation to Mauritius' rate case applications



Figure 14. ESCOM 400 kV operations training in Blantyre

URA is developing a tariff rate case for Mauritius based on SAEP's excellent rate case documentation from MERA

Eunice Potani, CEO of Utility Regulatory Authority Mauritius

⁶ The ESCOM system has historically functioned as an isolated 132 kV network and so staff do not have experience operating in an interconnected system.

- SAEP completed an EE and Demand-Side Management (DSM) study that was focused on reducing household electricity consumption. The rationale was two-fold: households have a high contribution to peak demand, and they attract significant cross-subsidies from industrial and commercial consumers. SAEP conducted a survey of selected households to gain insight into electricity use. One of the results from the survey was that most households in Malawi avoid using electricity for water-heating or cooking. In particular, few use geysers, and many do not even install them. Therefore, the promotion of solar water heaters to substitute electric geysers would have limited impact on curtailing household contribution to maximum electricity demand. The report also drew attention to the prevalence of charcoal use in households with access to electricity. The recommendations of the report will support the implementation of the government's Energy Efficiency strategy aimed at promoting Malawi's industrialization while increasing access to modern energy services among the population
- JCM continues to advance their 60 MW Salima solar PV project that reached financial close in July 2019. The project is in the final stages of preparation to begin construction. This is the first solar project in Malawi region to come online. As such, SAEP has kicked off vRE integration support for ESCOM so that this important solar asset can effectively be integrated into ESCOM's grid
- SAEP developed a financial model that accurately modelled JCM Power's 18 MW Golomoti solar plant and its 5 MW storage component, and assisted with optimization of the storage sizes and the revenue structure of storage versus direct sales. The 5 MW storage component will enhance the project with grid stability, as well as offset the expensive use of diesel. JCM is still working on whether or not they will be able to add storage to the project; and are also waiting to hear back from ESCOM regarding its inclusion into the PPA. SAEP anticipates the full development of the Golomoti project after the Salima solar project. Once completed, the battery storage plant will be the first of its scale in the Southern Africa region, laying the foundations for deployment of similar projects in the future

2.7 Mozambique



Mozambique has high power generation potential that could be harnessed from various sources, including hydro, coal, natural gas, wind and solar. Despite this great potential, power distribution in the country is severely underdeveloped resulting in only 30% of the population having access to electricity. Mozambique aims to electrify 100% of the country by 2030 and has placed a priority on rural electrification.

In response to Mozambique's ambitious and aggressive electrification targets, SAEP is working with the national utility EDM to complement their electrification initiatives with the establishment of an EMU. In addition, SAEP continues to support EDM on transmission projects with the main focus on the TTP.

BY THE NUMBERS



583 MW

Pending Financial Close



91,575

Actual Connections



1,082,500

Projected Connections

2.7.1 TOP ACHIEVEMENTS AT A GLANCE

The Temane Transmission Project Secures Funding

The Power Africa-supported TTP achieved a significant milestone on 28 August 2019 when all the funding agreements were signed. The TTP includes construction of ~560 km of single-circuit 400 kV high-voltage transmission and three new substations connecting Central Termica de Temane (CTT) IPP via Vilanculos to Maputo, and will form a key part of Mozambique's national transmission backbone. The World Bank, the African Development Bank (AfDB) and the Government of Norway allocated a total amount of USD \$357 million in grants, and the Islamic Development Bank (IsDB), OPEC Fund for International Development (OFID) and the Development Bank of Southern Africa (DBSA) in total committed USD \$185.7 million in loans. During the signing ceremony held on 28 August 2019 in Maputo, the Mozambican government recognized and celebrated the collaborative effort in finalizing the funding.

Since January 2018, SAEP has supported Mozambique's national utility, EDM, in bringing TTP to financial close by providing an embedded project advisor to deliver long-term organizational and technical support. The embedded advisor gives project coordination support within the TTP PMO and has managed key activities in moving the project forward, including the review of key outputs from project consultants, and facilitation of engagements between the funders to finalize the Project Financing Plan. Due to the complexity of the project, the procurement of an Owner's Engineer – an independent consulting firm that plays a supporting role to the technical project management – was critical. SAEP's embedded advisor assisted the procurement process with the evaluation of shortlisted companies, the correspondent bidding phase and final selection. On 2 May 2019, the World Bank approved the appointment of the Owner's Engineer.

Construction is expected to begin in June 2020 and the line and substations are scheduled to be operational by the end of 2023. *For more details on support to the TTP, refer to the success story section in Appendix A.*

Electrification Assistance to Mozambique Makes Progress

EDM has taken the lead role in the implementation of the Government of Mozambique's efforts to expand access by extending the electricity network in the country and reach 100% connections by 2030. To support EDM in reaching its electrification targets, SAEP is working in cooperation with EDM to design, set up and operationalize an EMU. The EMU will ensure the electrification program is well managed, planned and implemented in a cost-efficient and sustainable manner. The successful operation of the EMU will support EDM as it connects 300,000 to 400,000 customers annually. Thanks to SAEP support, EDM is already actively connecting new customers and has so far achieved 83,507 connections.



Figure 15. EDM CEO, Aly Sicola, presents EDM's electrification strategy

On 19 August 2019, EDM presented its implementation plan for the national electrification program during an event attended by energy sector representatives, Government of Mozambique officials, development partners, and EDM senior management. The CEO of EDM, Aly Sicola, expressed appreciation for USAID's assistance and endorsed the establishment of the EMU. SAEP will further support EDM to implement the operating model through capacity building workshops with the EMU team and other EDM departments involved in the electrification process. Currently, SAEP and EDM are working on the appointment of the key managers for the EMU, which are scheduled to occur by the end of October 2019. Afterwards, SAEP will roll out the program to the regional delegations.

2.7.2 ADDITIONAL HIGHLIGHTS FOR MOZAMBIQUE

In Year 2, SAEP engaged in the following additional activities:

- In August 2019, SAEP began engaging with the new energy regulator in Mozambique, *Autoridade Reguladora de Energia (ARENE)* on developing a roadmap to begin regulating downstream natural gas distribution. ARENE has not yet completed some of the basic organizational and administrative tasks required for it to exercise its full regulatory functions. SAEP provided a first draft of the roadmap for review after the August 2019 mission, and the program expects feedback by the end of October 2019. The roadmap includes, but is not limited to, adoption of rules for natural gas local distribution companies in Mozambique
- SAEP undertook exploratory missions at the end of Year 2 looking into what barriers exist for off-grid work to move forward aggressively in Mozambique, and developed an impactful program for Mozambique's off-grid landscape. The planned support activities have been modelled on the successful approaches taken in Malawi and Zambia, and are focused around route-to-market approaches using geospatial analysis. Starting in Year 3, the SAEP Team will share lessons from the SHS programs there to help companies as they are expanding in Mozambique. SAEP previously assisted SolarWorks!, a SHS distributor, to design a three-year strategic plan that focuses on data-driven growth and increased revenue streams, and continues to support and track the company's progress

2.8 Namibia



The power sector in Namibia has undergone several reforms, including the consolidation of more than 70 power distributors into five regional electricity distribution companies (RED), the establishment of transparent tariff setting procedures and the RE Feed-in Tariffs (REFiT) program; all overseen by the sector regulator, the Electricity Control Board (ECB). While the country's generation mix is comprised primarily of hydropower and solar projects, the majority of electricity is imported through various contracts from South Africa's Eskom and SAPP.

BY THE NUMBERS



20 MW

Pending Financial Close



Laws/Policies Proposed/Revised

In Year 2, SAEP continued to provide technical assistance support to various public and private stakeholders, including the ECB, the Central Northern Regional Electricity Distributor of Namibia (CENORED), the City of Windhoek (CoW) and the Ministry of Mines and Energy (MME). While several generation projects have come online in the past few years through the Namibian REFiT program, NamPower continues to look at opportunities for increasing baseload and mid-merit generation.

2.8.1 TOP ACHIEVEMENTS AT A GLANCE

Battery Storage in Namibia

Following on the energy storage work done by the ECB in 2018, SAEP collaborated with CENORED to explore the possibility of the RED utilizing energy storage in its network. The ability to economically store electricity as a “game-changer” for the sector is well known and anticipated. In addition to battery storage-related support to the ECB, SAEP completed the second phase of a battery storage cost-benefit assessment for the regional distributor, CENORED. The second phase of the work included a refinement of the cost-benefit modelling done during phase one, focusing on three of the most promising CENORED sites. SAEP's work also reviewed the market and regulatory barriers and enablers of battery storage, as well as the applicable use cases for CENORED's stated objectives – electricity cost reduction. SAEP's study concluded that CENORED pursuing a solar and battery storage plant could result in cost savings, but will require close coordination with national stakeholders such as the ECB. Additionally, the study recommends CENORED reaches out to the wider cooperating partner community for support in conducting feasibility studies and potentially developing a pilot plant.




Figure 16. Battery storage banks at the Tsumkwe plant in Namibia

SAEP advised CENORED in the evaluation and determination of next steps on potentially adopting battery storage, with the potential to provide an estimated USD \$33 million in savings based on current analysis. SAEP worked closely with CENORED's Engineering and Systems Development team to identify

which battery storage applications are most applicable to the company's current operating environment. SAEP's analysis evaluates the costs and benefits of standalone battery storage supplied from the distribution grid and integrated solar PV and battery storage, relative to any potential solar PV investments and "business as usual" opportunities.

2.8.2 ADDITIONAL HIGHLIGHTS FOR NAMIBIA

In Year 2, SAEP engaged in the following additional activities:

- The CoW has a large informal settlement adjacent to it that has never had power or other municipal services provided and where up to 30% of the city's population resides. SAEP assisted the CoW to develop a plan for accelerating the electrification of 40,000 peri-urban informal settlements on the outskirts of the city. Phase 1 included a review of available technology options and their applicability, and Phase 2 focused on prioritizing settlements and technology options as part of a broader roll-out plan. The 40,000 households are currently not part of any plan or budget and SAEP's work can assist in changing this. The work is due to be completed in November 2019. SAEP is working closely with the CoW's team and plan to present the preliminary findings at a close-out workshop that will be held towards the end of November 2019. The stakeholder workshop will be the penultimate step prior to the finalization of the work product
- 
- Figure 17.** Informal settlement outside Windhoek
- In anticipation of developing an overall framework for mini-grids, the ECB requested SAEP support in estimating the tariff that would be required to make a mini-grid sustainable. Using the existing tariff methodology of the ECB, SAEP prepared a hypothetical tariff for a mini-grid using some actual data from an existing mini-grid from Namibia. After reviewing data (from the Tsumkwe mini-grid in Northern Namibia), SAEP calculated a tariff that would cover the costs of a mini-grid with Tsumkwe's profile following Namibia's current methodology. The preliminary result was in the range of USD \$0.40/kWh. This, even if this amount were considered to be the mid-point of a plus or minus 10% band, would clearly require a subsidy in order to make such a grid viable, given that USD \$0.40/kWh is more than what the average customer can afford. The draft has been reviewed by the ECB and SAEP will meet with the ECB in mid-November 2019 to review the conclusions thoroughly and prepare to take the findings to ECB's Executive Committee. At that point, subsidy options are likely to be explored by the ECB in order to make electricity generated by mini-grids more affordable
 - The MME through the Namibia Energy Institute (NEI) is working to advance the national EE policy. For this to happen, discussions around the topic are needed. SAEP provided support to the MME and the NEI at a NEI-hosted DSM workshop held on 28 February and 1 March 2019. The support included presenting a session and providing training to the attendees, who included members of the national DSM committee on DSM approaches and technologies. The training brought the DSM committee up to speed with the approaches to DSM, knowledge they need in preparation for the oversight role they will perform related to the development of the DSM portion of the national EE policy. Additionally, SAEP assisted the NEI to draft TOR for recruiting the consultant who would work with the NEI and the MME to develop a national EE policy using

the electricity sector as a point of departure. The MME is keenly tracking the development of this section of the EE policy as they want to use it as the template approach for the development of the rest of the policy. SAEP has included a follow-on activity for Year 3 that will entail a review of the policy that the appointed consultant develops

2.9 South Africa



South Africa has favorable conditions for solar and wind power generation, but these sources currently only contribute about 3% of energy supplied to the national grid. The need to diversify and strengthen South Africa's energy mix and to increase economic growth prompted the South African government in 2010 to create the RE Independent Power Producer Procurement Program (REIPPPP). The program, managed by the IPP Office, competitively procures power from the private RE market. It has been described as “the most successful public-private partnership in Africa in the last 20 years” and is contributing to the country's target of producing 7,000 MW of RE by 2020 and 17,800 MW by 2030.

BY THE NUMBERS



75 MW
Reached Financial Close



180 MW
Pending Financial Close

As the largest economy in Southern Africa and a critical country in regional integration, SAEP's work in South Africa has been focused on areas where essential technical assistance can provide additive value and drive change across the region. The main focus of SAEP support in Year 2 has been primarily in providing technical support to various privately financed RE projects.

2.9.1 TOP ACHIEVEMENTS AT A GLANCE

26th RE Project Reaches Financial Close

The Loeriesfontein Orange IPP Project successfully reached financial close on 31 December 2018. Loeriesfontein Orange – a 75 MW solar PV project to be located in the Northern Cape – is the 26th RE Independent Power Producer Procurement Program (REIPPPP) project brought to financial close. SAEP supported REIPPPP through the advancement of 27 RE IPP projects received as part of Bid Windows 3.5 and 4.0, responding to the Department of Energy's IPP Office's request for support through providing training and advisory services to staff on how to conduct initial due diligence work specific to the technical/engineering and the economic development components of the bids.



Figure 18. Before-and-after construction of a turbine at Excelsior Wind Farm in the Western Cape, South Africa

As the 26 projects move forward, in the coming five years South Africa will see USD \$4 billion in private sector investment, will have 52,000 new jobs created, and will realize 2,305 MW of new clean generation to support much needed economic growth. South Africa's Northern Cape province will receive the majority of the investment with 14 new wind and solar PV projects, followed by the Eastern Cape with four new wind projects, followed by the North West Province with four new solar PV projects.



Figure 19. The 10 MW Konkoonies PV Solar Energy Facility is located on a 30-hectare site in the Northern Cape, South Africa

2.9.2 ADDITIONAL HIGHLIGHTS FOR SOUTH AFRICA

In Year 2, SAEP engaged in the following additional activities:

- In late 2018 and the first half of 2019, SAEP assisted the Energy and Climate Change Directorate of the City of Cape Town (CoCT) to analyze global and local models for the rollout of a rooftop solar PV program, referred to locally as small-scale embedded generation (SSEG). SAEP then developed a financial model to demonstrate the efficiency of a U.S. residential solar financing model known as Property Assessed Clean Energy (PACE). The purpose of the model was to help the municipality evaluate the costs and benefits of establishing a PACE pilot program. The first round of the program is envisioned to finance 50 MW of rooftop PV across ~10,000 homes between 2020 and 2022. This will result in private sector investment of over USD \$45 million, an estimated additional 600 temporary installation jobs and will triple the size of Cape Town's rooftop solar market. In September 2019, SAEP provided further training on how to use the financial model to ensure the CoCT team is able to apply the model effectively and to facilitate ownership and sustainability

2.10 Zambia



The Government of Zambia declared its commitment to reach 7.2 GW in generation capacity (from the current 2.8 GW) and a 66% electrification rate (from the current 31%) by 2030. At the current rate of population growth, nearly 2.4 million new connections would be required by 2030. To achieve this goal, Zambia must – among other initiatives – increase its power generation capacity as well as develop a strategy to bring power to millions of unelectrified households.

In Year 2, SAEP's key areas of support included enabling new connections (e.g., grid and off-grid infrastructure planning, route-to-market and rollout support for off-grid providers, sales effectiveness trainings, and the definition of possible new consumer financing models), improving the investment environment, and supporting the national utility, ZESCO. SAEP's support has helped deliver access to power to ~181,700 households to date, which represents almost 10% of Zambia's 2030 aspiration.

BY THE NUMBERS



400 MW

Pending Financial Close



121,265

Actual Connections



702,509

Projected Connections

2.10.1 TOP ACHIEVEMENTS AT A GLANCE

Increasing Zambia's Power Connections by Improving Sales Effectiveness of Solar Systems

In Year 2, SAEP significantly improved the sales effectiveness of Zambian SHS companies through i) advancing and evolving a geospatial access model developed in Year 1 into a sales force performance management tool, and ii) turning insights from the sales front line into a sales force effectiveness training program. At the end of 2018, SAEP ran a month-long sales diagnostic and shadowed sales agents from four leading SHS companies to understand areas of improvement for sales. SAEP then trained 285 sales agents in remote locations, resulting in trained sales agents consistently performing better than their untrained counterparts. As a result of the training, sales increased on average from 20% to 36%. The increases are especially promising given that Zambian companies were simultaneously experiencing the effects of drought as well as foot-and-mouth disease affecting livestock in the Southern province. These early results suggest that sales will only continue to increase as conditions in Zambia improve.



Figure 20. A SHS sales agent explains his product to customers

To increase sustainability and further expand these improvements, SAEP is handing over all training materials to the Zambian SHS companies and working with them to integrate the content into the companies' own internal training and onboarding content. Through the Zambia sales force effectiveness program, SAEP has been able to impact not only communities by increasing access to electricity, but also the local sales agents by increasing their earnings and sales. *For more details on support to the SHS sales agents and companies, refer to the success story section in Appendix A.*

Helping ZESCO Use Generation More Efficiently

Zambia still relies on hydropower for almost 90% of its electricity. However, a protracted drought has left dam levels low, impacting power generation greatly and resulting in severe power outages. To help ZESCO to effectively utilize its available generation, SAEP supported ZESCO to develop an innovative system scheduling process that recognizes environmental constraints, like droughts, on hydro generation and forecasts the potential range of variable solar generation supplied from the solar plants.

Together, ZESCO and SAEP conducted extensive analysis of the characteristics of the different supply options, compiled operational data and held regular workshops. The result was an innovative scheduling and water valuation model that evaluates different hydro dispatch schedules for a range of possible water availability scenarios, determining water values for the various cases. ZESCO began operationalizing the model in August 2019, using it to simplify and standardize its scheduling process. The use of the scheduling model has helped ZESCO to better utilize available resources, allowing a more diverse clean energy mix. SAEP will continue to support ZESCO to further refine and improve the model as the utility takes ownership of the revised scheduling and dispatch process. *For more details on support to ZESCO, refer to the success story section in Appendix A.*



Figure 21. ZESCO is upgrading its power plants, but low water levels complicate their solution for load shedding. This penstock for the new 15 MW Lusiwasi power station carries water from a canal down to a turbine house

2.10.2 ADDITIONAL HIGHLIGHTS FOR ZAMBIA

In Year 2, SAEP engaged in the following additional activities:

- In Year 2, SAEP's assistance to SHS companies resulted in 121,265 new connections. The Program's support took several forms, mainly tailoring development of route-to-market strategies, training sales staff, and fueling the implementation of customs and duty exemptions on imported SHS and components. SAEP support accelerated Zambia's electricity access progress from the current 31% to at least 51% by 2030

- In Year 1, SAEP developed a geospatial tool and trained public and private-sector players, including REA and SHS companies, on how to use the tool for developing expansion strategies. In Year 2, building on the geospatial tool work from Year 1, SAEP provided support to 14 companies, institutions, and individuals on the geospatial model, and designed and delivered training on sales force effectiveness tailored for SHS companies. SAEP rolled out three waves of training, reaching ~400 participants made up of SHS company agents and managers. Other key areas of support in Year 2 included assistance to the Off-Grid Task Force and SIAZ on standards and tax exemptions for SHS and related components. SAEP supported the development of the fact base that led to the Zambian cabinet approving fiscal exemptions for SHS components; these amount to up to 27% of end-user prices and were previously inconsistently implemented. SAEP also provided operational support to SIAZ with the aim of attracting more members, formalizing their operations and officially launching the association on 20 June 2019. The association acts as the consolidated voice for the private sector and presents a single point of contact for solar providers
- SAEP assisted the Energy Regulation Board (ERB) with preparations for the pre-launch of Round Two of GET FiT Zambia held on 9 November 2018 in Lusaka, Zambia. The assistance concludes SAEP's support to ERB's calculation of Round Two's feed-in tariffs. The resulting tariffs were formally announced on 8 October 2018 and are now in effect. SAEP's financial model has been handed over to the ERB with a comprehensive user manual, enabling them to update and review future scenarios. When successful, this round will procure up to 100 MW of mini-hydro energy by Q4 of FY 2019 and is expected to reach financial close in 2021
- In August 2019, SAEP fielded a Zambian Transaction Facilitator who will be largely dedicated to work with Round Two of GET FiT Zambia's 120 MW solar PV project. The Transaction Facilitator will provide support to the three consortiums to help them achieve financial close by end of 2020



Figure 22. Geoffrey Kaila, SIAZ Chairman, introduces the association to participants of the SIAZ launch held in Lusaka on 20 June 2019

2.1 | Regional



Two out of three people in sub-Saharan Africa do not have access to electricity. Increased access to affordable and reliable energy supply across Southern Africa requires greater cooperation across borders to ensure power can move freely and securely. With efficient systems in place, greater volumes of electricity can be traded at lower costs to governments and consumers. Strengthening institutional capacity remains a key focus in overcoming the challenges of the energy sector in Southern Africa.

BY THE NUMBERS



1,500 MW
Pending Financial Close

In Year 2, SAEP provided trainings including on vRE integration and Quality of Supply (QOS) which resulted in an improved understanding and coordination on these topics across the region. Further, SAEP designed and delivered a range of activities that increased understanding of the region as a whole as well as what is needed for the individual institutions to meet their mandates. as avenues to expand the impact of activities delivered in individual countries. An overview of these activities with SADC, SACREEE, SAPP and Regional Energy Regulatory Association (RERA) follows below.

2.1.1 TOP ACHIEVEMENTS AT A GLANCE

SAEP Supports Power Africa to Explore Mega-Solar Feasibility in Botswana and Namibia

In August 2019, Botswana and Namibia announced that they are looking to develop a mega-solar project that could add up to 5,000 MW of new solar power over the next two decades. With support from the World Economic Forum's Global Future Council on Energy – which includes organizations such as the World Bank Group, IFC, AfDB, Africa RE Initiative, New Partnership for Africa's Development, the International RE Agency (IRENA), and the U.S. Government-led Power Africa initiative – the project will tap into the region's vast solar power potential.

SAEP supported Power Africa to investigate possibilities of building a mega-solar park in Namibia or Botswana through a mix of PV and potentially concentrating solar power (CSP), with a generation capacity exceeding 2,000 MW. The Mega-Solar project was conceptualized by the Power Africa Coordinator's Office (PACO) and was expanded on by SAEP. A resulting white paper⁷ developed by SAEP has been proven to be a useful guide for the governments of both Botswana and Namibia as they contemplate the benefits of pursuing such a project for their individual countries as well as for the wider region. SAEP's Mega-Solar white paper was well-received by the President of Namibia as well as by ministerial delegations from both Botswana and Namibia during meetings held during the US-Africa Business Summit in Maputo, Mozambique in June 2019. Both Botswana and Namibia have expressed a strong interest in exploring the concept further through a detailed feasibility study.

⁷ The Mega-Solar White Paper is available here: https://pdf.usaid.gov/pdf_docs/PA00VV6TR.pdf

Guideline for Access of New Generators to the SAPP Interconnected System

Following a request, SAEP assisted SAPP to develop guidelines for connecting IPPs to the SAPP grid for cross-border trade. The guidelines focus on the technical functions and roles of how different IPPs will interface with SAPP. Although SAPP members engage with each other in bilateral and spot market trading, opportunities exist to review and enhance current practices and to allow more participants. The absence of a clear guideline on how independent generators can become members have resulted in the delayed consideration of about five such applications, with a MW impact of around 400 MW. The SAPP Planning Subcommittee adopted the Guideline on 27 August 2019. SAEP will continue to engage with SAPP to assist with the rollout of the guideline and to provide support in promoting additional IPP participation.

2.1.1.2 ADDITIONAL SUPPORT TO REGIONAL INSTITUTIONS

In Year 2, SAEP engaged in the following additional activities:

Support to SADC Secretariat

- **Review of SADC's Protocol on Energy:** The SADC Protocol on Energy ("The Protocol") was signed in 1996 and targets a key role in translating the goal of open non-discriminatory energy market and electrification needs with investment opportunities into reality. Since the enforcement of the Protocol, the Member States have embarked on several reforms through agreements and policy documents, yet most of these documents have not yielded fully integrated energy cooperation in the region. SAEP was requested by SADC to assist in the review and update of the Protocol so as to better reflect on the current achievements and future goals of the Member States towards regional energy sector harmonization. Specifically, the task is designed to support SADC's strategic priorities and objectives to achieve regional integration, economic growth and poverty eradication. SAEP completed the review in Year 1 and assisted SADC in presenting the updated Protocol at the Extraordinary Meeting of SADC Energy Officials in March 2019. The meeting agreed that Member States should consult internally on the identified and analyzed gaps, the proposed amendments to the Protocol and other provisions requiring modification. Once comments from all members have received, the document will be taken through the various SADC structures and should be ratified at the SADC Summit in 2020. SADC has requested SAEP to continue to provide support until the Protocol has been ratified at the summit
- **Terms of Reference for the Regional Gas Masterplan:** SADC requested SAEP support in drafting the TORs that SADC used to appoint a consultant who will develop the Regional Gas Masterplan. The TORs prepared by SAEP were approved by SADC and later reviewed and approved by the SADC-hosted Extraordinary Meeting for SADC Senior Officials in Johannesburg, South Africa held from 28 to 29 March 2019. The TORs were then recommended for endorsement by the ministers responsible for energy. SAEP will continue to advise SADC as their consultant advances the work



Figure 23. SAEP attends the SADC Protocol on Energy workshop and the regional consultative meeting on the Regional Gas Master Plan in Windhoek in December 2018

Support to SACREEE

- **SACREEE's Business Operating Guidelines:** SAEP is supporting SACREEE in the development of the Centre's operating guidelines. SACREEE remains a key institution within the SADC regional stakeholders and a key contributor to the renewable programs within SADC. The operational guidelines are critical to security of funds for regional programs on RE and EE programs. SAEP facilitated various sessions with stakeholders to get input in the design and development of the guidelines, conducted a documentation review to draw on leading practices, and developed a framework for the drafting of the guidelines. In September 2019, SACREEE endorsed the final draft guidelines. SAEP will present the operating guidelines to the interim Board of Directors for approval during the SACREEE Steering Committee meeting on 4 October 2019 in Johannesburg, South Africa

Support to SAPP

- **Building Relationships Between African and U.S. Utilities: SAPP Study Tours to U.S. Utilities Completed:** SAEP was requested by SAPP to assist in organizing two World Bank-funded study tours to the U.S. for their Operating Subcommittee (OSC) and Environmental Subcommittee (ESC) from 27 October to 3 November 2018 and 3 to 10 November 2018 respectively. SAEP developed the tour agenda and secured meetings with various U.S. organizations as well as provided logistical support to SAPP with transport arrangements and hotel bookings. During the tours, SAPP subcommittee members learned leading practices in power system operations, planning, regulation, power markets, environmental management practices and standards. SAEP will continue to engage with SAPP to facilitate the strengthening of long-term partnerships established between SAPP and the U.S. organizations following the conclusion of the study tours

SAPP members have expressed their full satisfaction on all aspects of the visit, and the selection of the institutions that were visited... the subject matters of interest were indeed fully addressed

- Johnson Maviya, SAPP Environmental Officer

- **Capacity Building Workshops:**
Quality of Supply Quality of supply (QOS) is a very important discipline for both proactive and reactive analysis of system disturbances. Although QOS has been discussed for quite a while, various previous attempts have failed to establish a QOS database for the use of the Southern African Power Pool Coordination Center (SAPP CC) and its members. SAEP conducted a capacity building workshop on QOS for the SAPP QOS Working Group in Johannesburg, South Africa from 13 to 15 November 2018. In total, 25 participants from 15 different SAPP members attended the workshop to learn about the theory of power quality and ways to investigate and to mitigate power quality problems. Due to the renewed focus on QOS, the SAPP QOS Working Group will travel to the U.S. from 2 to 9 November 2019 to learn best practices from organizations in the U.S. managing power quality issues and developing power quality standards and regulations; once they return SAEP will continue to work with them in implementing QOS leading practice



Figure 24. SAPP Quality of Supply training

RE Technologies and Operational Challenges The number of RE projects across the SADC region are growing as countries work to address environmental concerns, reduce dependence on fossil fuel imports while working at the same time to meet the goal of universal access to electricity for its citizenry. In order to realize the benefit of RE roll-outs and to exploit the considerable RE potential in Southern Africa, SAPP asked SAEP to help build the capacity of its members on how they can embrace the integration of these technologies into their grids. In response to SAPP's request, SAEP conducted a capacity building workshop for SAPP Planning Subcommittee (PSC) members from 10 to 11 October 2019 in Johannesburg, South Africa. The purpose of the workshop was to improve SAPP's understanding of RE integration into the SAPP grid and how utilities can embrace the integration of RE technologies into their own grids. In total, 15 participants from 10 different SADC member countries attended the workshop. The workshop contributed to raising SAPP's awareness of the need to conduct a regional impact study, which was funded by the World Bank



Figure 25. SAPP RE technology training

Support to RERA

- **Technical Input to Regional Electricity Regulators Association Conference:** SAEP provided significant support to RERA in both the organization and execution of the RERA Annual Conference held in Lilongwe, Malawi in November 2018. SAEP helped to develop the agenda, which included presentations and facilitated discussions by several SAEP Team Members and counterparts, including MERA presenting on their ESCOM tariff review and CENORED presenting on their battery storage model. More specifically, SAEP facilitated the Forum of the Board Members meeting and presented on: Transparency in African Regulation; Regulation and Governance in an Unbundled Electricity Market; Integrating Distributed Energy Resources; Harnessing Regional Gas Resources, Issues and Options; Women and Youth Empowerment for Sustainable Development; Facilitating Regional Transmission Development; Development of Electricity Supply Sector Key Performance Indicators
- **Key Performance Indicators for the Regional Electricity Regulators Association:** SAEP and RERA member regulators produced a robust and consistent set of 30 KPIs useful to compare power utilities located throughout Southern Africa resulting in improving utility governance and performance. The consistent set of performance metrics across the region enable both utilities and regulators to gauge their performance relative to their peers which will provide the In Year 2, SAEP organized and facilitated workshops with 10 SADC national regulators and utilities to ensure sustainability of the KPI process. The workshops were completed and all national regulators are on board with the 2019 data collection process. SAEP attended the RERA Structures Meetings held on 30 August 2019 in Mauritius to present the objectives of the KPI project work, share progress to date and respond to questions from committee members. The committee members discussed the RERA KPI Sustainability Model and expressed their support for the model. The KPI project raised the awareness of the importance to measure progress in the electricity industry in Southern Africa, in a balanced (holistic) manner. It is used to get alignment between the regulators and key stakeholders on the areas of the industry that require more focus. The next steps will be to complete the data collection and data processing phase and present the results at the RERA conference in November 2019 which will lead to the issuance of the RERA KPI report in early 2020

- RERA E-Module on Regulatory Governance:**
 On 29 August 2019, SAEP launched an e-module on regulatory governance at the RERA Structures Meetings in Mauritius. As part of the launch presentation, participants consisting of representatives from RERA member countries, were given a summative assessment and awarded a pass rating. The members all adopted the new e-module and committed to its use in their various countries. RERA, as the formal association for regulators, is tasked with the facilitation of regulatory capacity building among national and regional members through skills training. SAEP had previously collaborated with RERA on several training packages and programs and given the need to find an optimal and scalable solution to deploy these learning interventions, SAEP responded through digital intervention on selected training courses. The e-module for regulatory governance aims to enable all RERA's members and key staff to understand the importance of regulatory governance arrangement and through completion of the course understand how to operate effectively and identify measures that the regulator needs to take for high standards of public confidence and trust. The digital approach to training is a strategy that RERA has stated they want to leverage to amplify skills development amongst their members due to opportunity to optimize costs for training



Figure 27. RERA e-module launch in Mauritius



Figure 26. RERA's new e-module developed with SAEP's support focuses on regulatory governance



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3. Program Management, Finance, and Operations

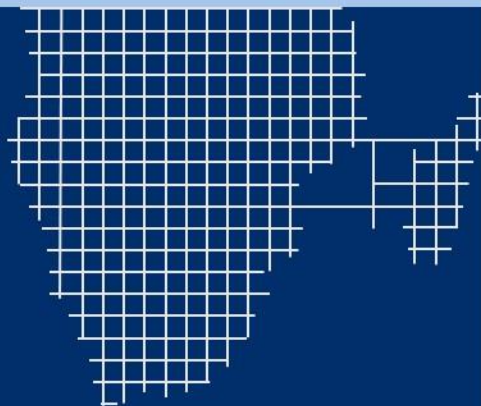


PHOTO: USAID SAEP

Engineers at BioTherm Energy's Excelsior
Wind Farm assembling a turbine

3 PROGRAM MANAGEMENT, FINANCE AND OPERATIONS

In Year 2, SAEP's PMO continued to integrate, facilitate and coordinate the core and cross-cutting program functions such as knowledge management, communications, M&E, environmental monitoring and gender integration. Additionally, SAEP's Finance and Operations (F&O) Team oversaw the Program's financial management, HR management, procurement, security, logistics, and general administration. Through the PMO and F&O teams' close coordination with the Deloitte Home Office, SAEP has successfully grown into a well-functioning Program team.

3.1 SAEP Program Management Office

In Year 2, the PMO became a fully-fledged Program support function. SAEP established and refined standard operating procedures in support of technical delivery, streamlined processes to manage counterpart and stakeholder relationships, and upheld M&E standards. The following section provides an overview of major PMO deliverables from Year 2:

Full Staff Component. PMO attained its full staff complement with the onboarding of the Project Performance Manager, M&E Specialist, Gender Specialist, Communications Officer and Environmental Specialist. The staff capacity enables the PMO to implement its roles and functions at a high standard.

Knowledge Management. In Year 2, the PMO provided support in capturing and archiving technical outputs and deliverables, ensuring that these documents are properly linked and accessible to stakeholders.

Project Management Support. WRIKE, a project management system, was introduced and implemented in Year 2. The tool allows the team to track all Program activities from planning to implementation phase.

Monitoring, Evaluation and Learning. As an essential component of the Program, the M&E team systematically measured and assessed all activities and results in achieving set targets for the year.

SAEP Year 2 Work Plan. The PMO facilitated the development of the Year 2 Work Plan and submitted the first draft to USAID on 30 August 2018. SAEP received feedback from USAID on the first draft and worked on all comments and recommendations, which led to the final approved Year 2 Work Plan on the 17 October 2018.

SAEP Year 3 Work Plan. The Year 3 Work Plan planning process kicked off in March 2019 with the PMO leading the process of gathering all proposed activities. The PMO worked with each Activity Manager to ensure all proposed activities were in line with the Program objectives for Year 3. A first draft of the Year 3 Work Plan was provided to USAID on 30 September 2019.

PMO & Finance/Operations Highlights

- Developed and submitted various USAID deliverables such as the Year 1 Annual report, Year 2 Work Plan, status reports and M&E tools and processes
- Increased USAID visibility to the public through regular social media posts
- Successfully incorporated the use of the WRIKE project management system
- Operationalized SAEP's environmental compliance monitoring system
- Received unqualified audit report for 2018
- Brought satellite office and housing facility online, which have become a center of activity in Lusaka
- Pretoria Office received updated design and branding in line with USAID standards

The Performance Management and Evaluation Plan (PMEP). The PMO worked closely with the USAID COR to approve and continuously improve SAEP's PMEP. The plan helps to guide the SAEP implementation team to monitor activities, evaluate the performance of the program and use lessons learned to improve program performance. The PMEP includes a learning component and builds off the Power Africa Monitoring, Evaluation and Learning (MEL) Plan. The SAEP PMEP proposes indicators against each of the expected program outcomes. It also describes the processes that SAEP will use to perform M&E throughout the life of the program. Each indicator has a Performance Indicator Reference Sheet (PIRS) located in Annex 3 and Annex 4 of the PMEP. There is also a Performance Indicator Targets (PIT) table, which includes the indicators and targets for the activity. Refer to point 3.1.3 for a detailed overview.

The Environmental Mitigation and Monitoring Plan (EMMP) / Catalyzing Local Opportunities Fund (CLOF). The approved EMMP and CLOF Management Plan were updated with more relevant environmental laws and regulations guiding the region. With the recruitment of a knowledgeable Environmental Specialist, the document will be regularly updated with current information that relates to the work implemented across the region. This EMMP ensures that the ADS 204.3 requirements for incorporating and monitoring appropriate mitigation measures is incorporated into all program activity. This EMMP also specifies how Initial Environmental Examination (IEE) conditions and mitigation measures will be implemented and monitored. Refer to point 3.1.4 for a detailed overview.

The Gender Action Plan. The approved Gender Action Plan creates a roadmap for the practical implementation of SAEP's gender equality goals. It lays out the gender equality goals for SAEP, the overarching high-level entry points for gender mainstreaming across the contract, and the specific implementation activities for each program outcome. The Action Plan is designed so that it aligns to planned program activities, is catalytic of the Program goals and presents cost-effective solutions.

The Communication Strategy. The SAEP Team updated and submitted to USAID the Program's original 2017 Communication Strategy for approval on 27 September 2019. The strategy has provided overarching direction and guidelines for designing, developing and implementing communication activities to inform stakeholders about successes achieved, to engage stakeholders in planned activities to foster continued support, and to communicate the USG's support – through USAID and the Power Africa Initiative – for improved access to energy in Southern Africa.

The Grants Manual. SAEP is in the process of updating the grants manual for submission to USAID early in Year 3. The manual presents the processes and procedures that SAEP follows when executing grants under the USAID technical assistance contract that authorizes grants under contract pursuant to USAID automated directives system. The manual has four sections; each section is designed with a particular audience in mind, and those sections pertaining to potential applications and to recipients are designed to stand alone. The manual is a single source of reference for policies and guidelines to be used for solicitation, negotiation, award and management of grants issued under the USAID contract awards. Refer to point 3.2.2 for more information.

Quarterly Program Performance Reports. Since the inception of the Program in March 2017, 10 quarterly reports have been compiled and submitted to USAID. The Quarterly Report for Q4 of FY19 forms part of this annual report as the Quarterly Report for Q4 of FY18 formed part of the Year 1 Annual Report.

Biweekly Status Report. SAEP has been reporting on activities and outcomes every two weeks since 12 April 2017. The template for this reporting has been iteratively improved over the course of the

years of implementation, and the report itself has become instrumental in keeping USAID and the wider group of Power Africa team members informed on SAEP's work by outcome and/or country.

Power Africa Field Update. SAEP provided inputs to the Power Africa updates report sent out by the PACO on a regular basis. The Field Update gives an overview of the work that goes into transforming the African continent's energy sector. It is the cornerstone of the Coordinator's Update that gets distributed to a much wider audience in the USG and is read by many key decision makers in other USG agencies who need to be informed of Power Africa's key successes and challenges.

Trip Reports. SAEP provided feedback on all duty travel by drafting reports after trips, which are shared with USAID and Power Africa in a continued effort to ensure uniform access to information is available to as wide a group as possible.

Communication Deliverables. The SAEP Communications Team developed and implemented various communication tools such as program and country fact sheets and success story write-ups. Refer to point 3.1.2 for a detailed overview.

3.1.1 STAKEHOLDER ENGAGEMENT

During Year 2, the SAEP cross-cutting components continued to set the stage for sustained collaboration, coordination and knowledge-sharing. In the reporting year, SAEP established a diverse mix of enabling partnerships and alliances, furthering all five interventions, and contributing to SAEP's overall results. As we continue with the implementation of the program across the region, the team will maintain those partnerships and identify new local, national, and regional institutions that SAEP can work with to tailor and implement our core activities.

SAEP engaged with counterparts in jointly designing activities. As such, these partners, named throughout our technical approach, are not just serving as counterparts for technical assistance, but are also committing their own resources and work alongside SAEP for activity implementation. Further breakdowns of stakeholder engagement can be found in the country sections above.

3.1.2 COMMUNICATIONS AND OUTREACH

In Year 2, SAEP continued to document and communicate the Program's purpose, goals and successes from Program start-up to the present. The documents developed served as marketing material at events and content for social media platforms. Focus areas included creating a social media presence for the Program to amplify the work done. Furthermore, the Communications Team focused on developing templates, implementing processes for Program-specific communications and ensuring impact resulting from activity delivery is appropriately conveyed. The following is an overview of major activities and outcomes from Year 2:

Social Media and Online Presence. During Quarter 2 (Q2), the Communications Team conducted in-depth research and analysis on the existing USAID and Power Africa social media platforms. The purpose of the analysis was to identify the respective platforms where SAEP successes, facts, events, and more can be posted and shared. SAEP worked on building relationships with the Power Africa Communications



Figure 28. SAEP marketing materials displayed during the Power Africa's 2019 Field Coordination Meeting in Johannesburg

Team and the respective USAID Document Outreach and Communication (DOC) offices. The following is an overview of some of the Program's social media initiatives for Facebook and Twitter:



Figure 29. Various social media posts from Power Africa and USAID Southern Africa

LinkedIn. After obtaining approval from USAID, SAEP created a LinkedIn page, called: “The USAID Southern Africa Energy Program, a Power Africa initiative” on 16 July 2019. The page is a platform for sharing timely program updates including, but not limited to, job postings and grant opportunities and provides SAEP with an engaging, up-to-date digital presence. By the end September 2019, the SAEP LinkedIn page had 121 followers.

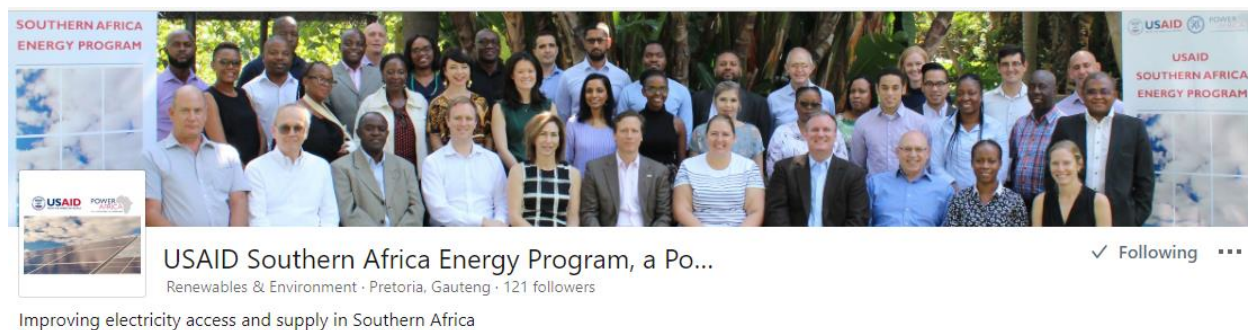


Figure 30. SAEP's LinkedIn Profile Banner

Photo Database. SAEP recruited a photographer tasked with supplying photos of SAEP activities suitable for publication on websites, social media and printed marketing materials. Specifically, during an assignment to Malawi, the photographer captured impactful images of SHS and beneficiaries as well as energy infrastructure. The Communications Team created a Flickr account for these photos where both the Power Africa and SAEP Communications Team now collaborates in sharing, editing, and downloading photos.



Figure 31. Examples of photos from SAEP's Communication Database

Events. Over the course of Year 2, SAEP implemented or supported a number of events. The following is an overview of events where the Program played a leading role; meaning SAEP was either the main organizer or involvement in the activity warranted external visibility:

- Malawi SHS Kick-Starter Pre-solicitation Workshop on 29 January 2019
- Solar Industry Association of Zambia (SIAZ) Launch on 20 June 2019
- Malawi SHS Kick-Starter Grant Winner Announcement Event on 16 July 2019
- EDM Electrification Management Unit Opening Ceremony on 19 August 2019
- TTP Signing Ceremony with Government of Mozambique and Financiers on 28 August 2019

Press Releases and External Media. The Communications Team drafted two press releases; both were published in the media:

- USD \$1.5 Million Results-Based Grants for Solar Home System Companies Launched in Malawi to Increase Energy Access
- Power Africa Awards USD \$2 million to Solar Home System Industry in Malawi

Communications Strategy. The Communications Strategy was updated and submitted to USAID in July 2019

PR Material. SAEP printed country-specific pull-up banners for Malawi, Mozambique, Namibia, and Zambia for use at country events; in addition, designed and printed a new SAEP banner wall and a SHS Kick-Starter for Malawi banner wall

Fact Sheets. Over and above the standard SAEP program fact sheet, the Communications Team finalized several other marketing materials which were approved by USAID:

- Country Fact Sheets for Madagascar, Malawi, Namibia, and Zambia as well as a fact sheet focused on regional activities
- Transaction Advisory Services Fact Sheet that provides an overview of the Program's tailored transaction advisory offering.

Success Stories. During Year 2, the following success stories (full stories are available in Appendix A) were developed:

- SAEP Supports Sign-Off on 26 RE Projects
- Sales Training Increases Solar System Sales and Connections in Zambia
- SAEP Guides Malawi's Mpatamanga Hydropower Project
- The Temane Transmission Project is Taking Shape
- Eswatini Prepares to Increase RE Generation
- Malawi's Electricity Generation Company Embraces Gender Equality
- Helping ZESCO Use Its Generation More Efficiently



Figure 32. USAID Malawi announces the Request for Applications for the SHS Kick-Starter Program Grant event



Figure 33. One of two press releases from Year 2



Figure 34. SAEP's Transaction Advisory Services Fact Sheet

Videography. SAEP contracted a professional videographer and tasked them to document the following:

- Film an interview with representatives of each of the four SHS companies – SolarWorks!, Vitalite, Yellow Solar, and Zuwa Energy who received the results-based financing
- Film an interview with EGENCO’s CEO, William Liabunya

The footage will be further enhanced and edited in Year 3 to produce success story-type videos that will be used to amplify SAEP successes on relevant social media platforms.



Figure 35. Video interview with Zuwa Energy, one of four SHS Kick-Starter grant winners

3.1.3 PERFORMANCE MONITORING

The PMO’s Program Performance Management function coordinates interconnected tasks from knowledge management services, M&E, and program management support tasks. These tasks include tracking and monitoring of the performance of the SAEP activities, data management and performance indicator reporting, archiving of activity-related documents and deliverables, provision of performance feedback that will enable evidence-based decision-making, and reporting on various performance indicators.

The PMO also established data verification and quality assessment processes in Year 2. These processes involved two things: firstly, a periodic desk analysis of the indicator data received in order to ensure the quality of data received through program delivery; and secondly, a Data Quality Assessment (DQA) exercise to validate the data received. The M&E team carried out a data verification exercise in September 2019 on some of the institutions that have been providing off-grid connections data. This exercise was successful; the marginal error of the connection data validated is less than 1%.

Fourthly, the quarterly reporting process was improved through the realignment of the project performance management tasks. The submission of the quarterly progress report and the Development Information Solution (DIS) has been timely and the performance indicator data reported has been more accurate and complete. SAEP’s PMEP has been periodically updated and revised with the indicator data. Likewise, the Year 2 Work Plan went through revisions every quarter to incorporate the development of the FY19 activities set to be delivered under various outcomes. For more information on the PMEP and FY19 Work Plan related activities, please see Appendices B, C, D, E, and F.

3.1.4 ENVIRONMENTAL MITIGATION AND MONITORING

In March of 2015, USAID Southern Africa’s Regional Economic Growth Office (REGO) completed an IEE covering the entire REGO portfolio of programs. The IEE recommended a “Negative Determination with Conditions” and a “categorical exclusion” for SAEP based on the type of assistance provided by SAEP – technical assistance and capacity building designed to increase energy production.

In July 2017, Deloitte submitted SAEP’s Environmental Mitigation and Monitoring Plan (EMMP) to USAID for review and approval. The EMMP identifies and describes potential environmental impacts that may result from SAEP-supported activities and provides a process for how SAEP staff will assess those potential negative impacts and, when needed, mitigate said impacts. The EMMP also presented a process for continually assessing activities as they evolve throughout the process of delivery, including agreed-upon monitoring and mitigation measures for SAEP staff and activity-level counterpart organizations to follow. In

August 2017, SAEP's EMMP was revised to include a Climate Risk Mitigation component. The revised EMMP was submitted for review to USAID in early September 2017 and approved on 15 September 2017. In September 2019 the EMMP was once again revised to include updated general content and environmental legislation, and it provided additional environmental impacts and mitigation in the impact's tables. The additions to the impacts and mitigation tables include a section on Concentrated Solar Power (CSP) technology, which was not included in the original EMMP.

As the Program moved to implementation with the Year 2 Work Plan approved in September 2018, SAEP has continued to operationalize the environmental compliance monitoring system. At the activity level, SAEP's Environmental Specialist continues to work with activity managers to assess potential negative environmental impacts and to develop mitigating actions. As per the approved EMMP, the process continues to include appropriate environmental due diligence activities as codified by an Environmental Review Form, including aligning activities with existing performance standards and ensuring activities comply with national and international environmental frameworks.

As of Year 2, all of SAEP's SOWs include paragraphs committing to compliance with environmental and social impact requirements. Additional assistance beyond the standard requirements was performed on the following activities:

- In Malawi, SAEP evaluated the CLOFT applicants for environmental compliance, and additional measures were implemented between June and September 2019 to ensure that the grant winners meet environmental leading practice standards
- In Namibia, the Environmental Specialist assisted in the development of the impact assessment for the energy optimization activity for NMP, where SAEP is evaluating the impact of promoting changing lightbulbs from incandescent to compact incandescent or light-emitting diode (LED) technologies in July and August 2019
- In Malawi, the Mpatamanga Hydropower project's Environmental and Social Impact Assessment (ESIA) and Inception Reports were finalized by environmental consultants CENOR Consulting Engineers and AGRI.PRO AMBIENTE respectively. The Environmental Specialists provided comments in July 2019 on the reviewed ESIA, and as a result, an additional amendment to the design is in progress.

3.1.5 GENDER INTEGRATION

In Year 2, SAEP developed a detailed gender action plan with implementable deliverables that have been achieved with great success.

SAEP focused on engaging with key stakeholders on the importance of female empowerment and understanding how those institutions are currently considering gender equality in their operations and service delivery. For example, the team worked with EGENCO by undertaking a Gender Self-Assessment to identify gaps, challenges, opportunities and successes in gender mainstreaming and to provide recommendations and an action plan on how to overcome such gaps and challenges.

Key gender integration activities and stakeholder meetings held during Year 2 include:

- The Gender Advisor gave a presentation at the RERA Conference on 14 November 2018 focused on empowering women through energy access and gender transformative policies within utilities
- The Gender Advisor met with EGENCO in November 2019 to discuss support to EGENCO's gender mainstreaming program. Following the meeting SAEP and EGENCO agreed to develop a SOW to begin collaboration
- In January 2019, the Gender Advisor reviewed the sales force effectiveness training manual that SAEP developed for sales training in Zambia to ensure incorporation of gender mainstreaming. She

then travelled to Zambia from 4 to 8 February 2019 to shadow the SAEP Team conducting sales force effectiveness training with agents from Vitalite and Kazang. The purpose of the trip was to analyze the training and identify possible gender gaps. The Gender Advisor recommended that a gender component be added to the training, and on 21 February 2019 she completed drafting a gender mainstreaming framework to be incorporated into the sales force effectiveness curriculum. Kazang and Vitalite have incorporated the recommended gender mainstreaming tools in their training

- On 18 February 2019, the Gender Advisor attended the Africa Women in Energy Conference in Johannesburg, South Africa, where she met with various delegates. South African Ministry of Energy Chief Director, Ms. Elizabeth Marabwa, and Deputy Director: Gender, Ms. Winnie Mamatsharaga, both expressed interests to collaborate with SAEP on the Women in Energy initiative. The ministry requires technical support in conducting a mapping of women in the energy sector in South Africa. A LOC was shared with the department on 24 June 2019 to carry out this work
- On 18 March 2019, SAEP revised the Gender Action Plan to focus on key activities that will result in impact in Year 2. Some of the revised activities include the EGENCO gender mainstreaming program, mainstreaming gender into the sales force effectiveness program, a gender toolkit, and ZESCO gender mainstreaming
- The Gender Advisor conducted a gender mainstreaming workshop in Lusaka, Zambia on 3 April 2019 for Vitalite HR, sales, and marketing teams on how to integrate gender in their work to attract more women to become sales agents and to create economic opportunities for women, especially in rural areas. Since then, Vitalite has promoted two women to management positions
- On 11 April 2019, the Gender Advisor served as a panelist at a Women in African Power (WiAP) webinar titled “Increasing Connections: The Power of Positive Leadership,” which was recorded and is available on the Power Africa website. The webinar session focused on improving female negotiation skills in leadership
- The Gender Advisor attended the 23rd Regional ETG meeting in Gaborone, Botswana on 16 April 2019 and delivered a presentation on empowering women through energy access to the SADC Advisory Group. The aim of the presentation was to highlight the importance of gender mainstreaming in regional energy sectors
- The Gender Advisor provided ongoing support to EGENCO with advice on how to increase the number of women in leadership positions. In June 2019, EGENCO hired the first female director in the utility: Videlia Mluwira has been appointed as the Corporate Affairs Director and Company Secretary. Gender Officer Doreen Kavala was promoted to a management position; she will be leading the gender unit in EGENCO. EGENCO has enhanced the skills of the only female engineer within EGENCO by funding Martha Murotho’s qualification to progress as a certified engineer. She is based at Nkula Power Station
- The EGENCO Gender Equality and Social Inclusion (GESI) Self-Assessment process began in July 2019 with an orientation workshop. Participants included 27 representatives, of whom 10 were women, from the engineering, HR, operations, and finance departments. The purpose of the workshop was to provide training on the importance of gender mainstreaming
- On 20 August 2019, the Gender Advisor served as a panelist at the gender integration session during the Power Africa workshop held in Pretoria, South Africa. The purpose of the session was



Figure 36. Gender Equality and Social Inclusion Workshop held at EGENCO

to share information with other Power Africa counterparts on SAEP successes and challenges in the efforts to advance gender equality. The presentation was well received and Power Africa has set up a Forum for all the Power Africa Gender Advisors. The Forum will serve as a space to meet twice a year to share the work each region is undertaking

- In September 2019 the Gender Advisor conducted focus group discussions and individual interviews with EGENCO in the following departments: Finance, Procurement, Operations, Projects, Corporate Services and Human Resources. Discussions and interviews formed part of the GESI process to gather more information from key senior managers, middle managers and support staff. During the discussion and interviews, it emerged that staff members are not well versed with gender mainstreaming information and requested more training on the subject. The information gathered from the interviews and focus group discussions will serve as a guideline for the development of the gender mainstreaming action plan
- As part of SAEP's ongoing gender integration efforts, the Gender Advisor continued to review the Program's SOW and provided gender-specific remarks and input

3.2 Finance and Operations

In Year 2, the Finance and Operations team continued to effectively support the project from a finance, human resources, travel and transportation, procurement, and overall administration perspective. The project office received an interior design and branding update in line with Power Africa and USAID standards. The project refined operations at the satellite office in Lusaka, Zambia. The office has become a central point of collaboration for all Zambia-focused activities. The project retained the services of an external auditor to conduct an audit of the 2018 financial statements and received an unqualified report along with positive feedback on the financial controls in place.



Figure 37. SAEP Pretoria office renovation

3.2.1 PROJECT STAFFING

Deloitte identified and mobilized required resources to support the delivery of SAEP as a program. Please refer to Appendix H for the Deloitte SAEP Organizational Chart. In Year 2, the following Program staffing joined SAEP:

- Moleboheng Sediyaadiya as the Administrative Assistant in October 2018
- Olukunle Ogundele as the Project Performance Manager in October 2018
- Edith Wanjohi as the Gender Specialist in October 2018
- Lana Nwosu as the Outcome 5 Lead in January 2019
- Tru-handé Kotze as the Communications Officer in March 2019
- Zandile Dunge as the Finance Assistant in March 2019
- Lubabalo Banzana as the M&E Specialist in April 2019
- Clarence Oelofse as the Transaction Advisor in April 2019

- Shilesh Muralidhara as the Transaction Advisor in April 2019
- Martina Foote as the Project Coordinator in April 2019
- Naresh Totaram as the Logistics Manager in June 2019
- Taryn Bigwood as the Environmental Specialist in June 2019
- Tea Mihic as the Outcome 2 Deputy Lead in July 2019
- Mpumelelo Mlilo as the Finance Manager in August 2019

3.2.2 SUBCONTRACTING

SAEP continued to engage the following subcontractors to provide technical assistance, advisory support and capacity development:

- **Deloitte South Africa:** Provides professional and administrative personnel to support project implementation
- **Fluxx:** Provides key support in managing SAEP's grants program
- **McKinsey:** Provides management consulting in power sector planning, energy policy, and program strategy
- **CrossBoundary:** Provides transaction advisory support and designs go-to-market strategies across Africa for solar home systems (SHS) and mini-grid providers and investors
- **Strategic International Advisory (SIAL):** Provides specialist utilities and infrastructure advisory services
- **Deloitte Zambia:** Facilitates the SAEP satellite office in Lusaka

In addition, SAEP engaged the following subcontractors in the project's second year:

- **Cliffe Dekker Hofmeyr (CDH):** Reviews, provides comments, and identifies leading practices related to legal documents; provides guidance on negotiating IPPs
- **Council for Scientific and Industrial Research (CSIR):** Assists ESCOM in improving its capacity to manage the integration of grid-scale renewable power assets into the national grid
- **Energy System Planning (ESP):** Assesses the impacts on the Eswatini transmission and distribution networks of integration vRE, especially solar
- **Engage Energy & Engineering:** Assists the Eswatini Water Services Corporation (EWSC) in designing an EE program that enables the utility to deliver water with a reduced electricity demand
- **GreenMax Sustainability and Finance:** Assists the Ministry of Natural Resources and Energy of Eswatini to develop an action plan for the implementation of their 2018 National EE (NEE) Policy

See Appendix G for a comprehensive list of resources mobilized for short term technical assistance.



Figure 38. SAEP Team Christmas Party, 2018

3.2.3 PROCUREMENTS

- Initiated a competitive procurement process within the local market to procure a video conferencing system for the project. The video conferencing system has been procured and installed, and the team has been able to hold multiple large gatherings where both the audio and video capabilities of the system have been used
- Sourced a service provider to assist with SAEP Pretoria office interior design. The SAEP office has been branded and decorated in line with Power Africa and USAID standards

3.2.4 GRANTS

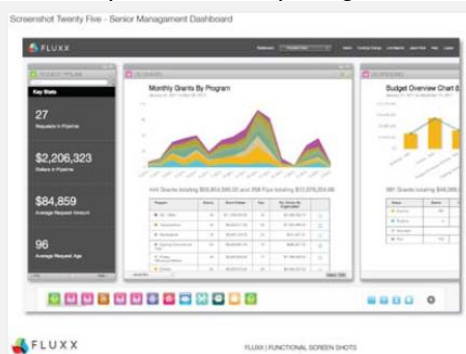
In Year 1, the SAEP Team developed the CLOF Plan and Grants Manual. In accordance with the manual, all grants will be administered through a clear, transparent, fair and competitive process, in accordance with 22 CFR 216 and USAID's ADS 201.5 and 204 regarding environmental safeguards, and subject to CO approval.

The SAEP Team used the Fluxx Grant Management Information System (GMIS) system – a dedicated, IT-enabled grants management platform – to configure the SAEP grants platform. This system streamlines and improves the CLOF management and reporting process. Through Fluxx's secure, cloud-based data exchange, USAID can access instantaneous and customized reports on CLOF disbursements, allocations and performance. Grantees can view up-to-date reports on their goals, milestones and financial performance, building local performance management capacity.

The SAEP Team identified grant ideas that aligned with technical assistance delivered and gaps identified in Year 1. These ideas were further narrowed to focus on results-based financing for access and connections. In Year 2, the initial round of grant financing focused on increasing connections in the SHS market in Malawi. In January 2019, SAEP launched the RFA for a USD \$1.5 million grant for SHS companies. The Kick-Starter Program will facilitate the development of the Malawi SHS market through a package of results-based financing, technical assistance to SHS providers, and enhanced access to capital for SHS companies entering or already operating there. By the application deadline of 29 March 2019, 20 organizations had submitted grant applications. Among the applicants were established international and local companies as well as local new entrants. After the technical and financial review, shortlisted companies were invited to attend a Q&A session in Lilongwe, Malawi to present their proposals and to clarify any issues that the review committee had questions on. In July 2019, USAID awarded USD \$2M in grant funding to Solarworks!, Vitalite Group Limited, Yellow Solar Power, and Zuwa Energy.

Better Reporting and Management – Fluxx

Fluxx's GMIS system supports interconnected data with grantees and has powerful data visualization and reporting capabilities to aid management, monitoring and compliance of grant portfolios. Grantees and authorized users, including USAID, can configure their own dashboards and task lists to support efficient operations and reporting.



3.3 CHALLENGES AND RISKS

During Year 2, SAEP encountered several significant challenges. SAEP continuously tracked these issues and mitigated much of their associated risk. The program will continue to consider potential challenges and risks in Year 3.

Challenges:

- **Malawi Elections.** Malawi has experienced some sporadic civil unrest in the months following the Presidential elections held on May 21, 2019. As a result, some SAEP travel to Blantyre and Lilongwe was periodically delayed and rescheduled in a response to increased security concerns. The situation is in the process of normalizing and SAEP is hopeful to continue activity delivery in the coming year
- **Transition to new President/Government in Madagascar.** After elections in 2018, the slow transition to the new government has negatively impacted SAEP support to the Ministry of Energy in providing hydropower project technical assistance. The Ministry had specifically requested that SAEP assistance be delayed until after June 2019, giving the Ministry time to finalize transition. SAEP's Year 2 Work Plan noted delivery of this support in January/February 2019, so meeting the Ministry's request has resulted in a significant delay in activity delivery. The government transition also caused uncertainty to the University of Antananarivo calendar, which made it difficult for SAEP consultants to integrate students into our activities as planned. SAEP had to change plans to employ university students to complete our solar home system (SHS) ability and willingness-to-pay survey in the SAVA region with consultants and Young African Leaders Initiative (YALI) fellows
- **BPC Procurement.** Significant barriers continue to confront the Botswana Power Corporation's (BPC) procurement of the 100 MW solar PV project, which will further delay the project reaching FC. These include i) an increased engagement by the Ministry of Energy in a manner which is giving the SAEP team concerns that the Ministry, who has no RE procurement experience and negative procurement experience from the past, may wish to heavily influence if not completely assume control of procurement, ii) a continued lack of engagement by the Ministry of Finance, required if a government support package for the project is to be developed, and iii) a recent decision by the various Botswanan stakeholders to restructure the project away from a joint venture, resulting in the release a new Request for Expressions of Interest (RFEOI). While the RFEOI is the correct move, the decision to restructure the project is shifting timetables considerably, with the new financial close date now forecasted for June 2021
- **Personnel Changes at MERA.** The Director of Economic Regulation, Eunice Potani, and the Director of Electricity and Renewable Energy, Welton Saiwa, both left the Malawi Energy Regulatory Authority (MERA) at the end of February 2019 due to their employment contracts not being renewed. Both Ms. Potani and Mr. Saiwa were key and strategic points of contact for SAEP in all MERA related work thus far. As a result, although Program activities continue to be delivered there, the working relationship with MERA has been moderately impacted due to these staffing changes
- **ZESCO Letter of Collaboration.** Kicking off implementation of activities as defined under the ZESCO-SAEP Letter of Collaboration (LOC) was delayed due to ZESCO taking extensive time to review the LOC addendum as well as to approve the Non-Disclosure Agreement (NDA). This was made more challenging when the SAEP point of contact, Mr. Changala Nswana, Director of Strategy and Corporate Affairs, retired in March 2019. On 19 March 2019, ZESCO and SAEP agreed on and finalized both the addendum and NDA. The LOC and NDA have subsequently been signed and deliver of selected activities has begun. Assuming no additional bureaucratic obstacles arise, we expect support to ZESCO will be fully delivered in Year 3

- **Coordination with IFIs.** Differences in culture (operating protocols, use of language, etc.) between a USAID-funded program and partnering IFIs have proven to be quite different. SAEP recognizes that effectively collaborating with IFIs in the delivery of development projects affords the greatest chance to prove truly transformational change and, as a result, the Program is effectively partnering with World Bank (Mozambique's TTP activity) and AfDB (Angola's ENDE and RTN activities). Over the course of Year 2, SAEP has experienced lapses in coordination resulting from the inherent difference between organizations, and is working to improve communications to ensure smooth and effective collaboration and as we move forward together in Year 3 delivery

Ongoing Risks:

- **Electoral and Political Transitions.** Over the life of the SAEP, most if not all of the Southern African nations will experience political elections. To date, SAEP has seen impacts on Program delivery vary from positive (Angola), neutral (South Africa), and negative (Malawi and Madagascar as noted in the "Challenges" section above). In Year 3, SAEP will see elections in Mozambique (scheduled for October 2019) and in Namibia (scheduled for November 2019), either of which may impact SAEP's current relationships with the government should key officials change, potentially impacting a suite of activities currently being delivered there
- **Global Market Fluctuations and Regional Interdependencies.** Prices of energy commodities are often affected by global market fluctuations; likewise, national energy systems naturally have regional interdependencies as they pertain to imports, exports, and transportation networks. Because of this, each individual Southern African nation is somewhat constrained by trends and events impacted by external factors. To mitigate this constraint, SAEP will incorporate market research and trend analysis to stay abreast of global energy market developments and changes. SAEP will also focus on regional community engagement and coalition building to unite Southern African nations in energy sector reform and coordination where possible. The SAEP Team will also monitor interdependencies that can affect the success of the Program. No major trends affected implementation this past year



USAID
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4. Appendices

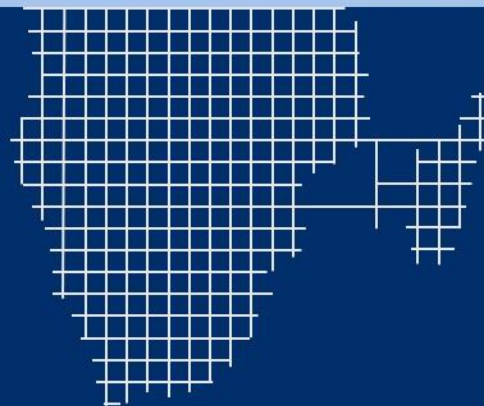


PHOTO: USAID SAEP

An engineer conducting routine maintenance at the 45 MW Aggenys Solar Energy Facility in South Africa

APPENDIX A SUCCESS STORIES

The following pages include full-page copies of SAEP's Success Stories. These single page handouts summarize the impacts of SAEP's engagements across Southern Africa.



USAID
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SUCCESS STORY

Eswatini Prepares to Increase Renewable Energy Generation

The Kingdom of Eswatini is a landlocked country and depends on South Africa to supply nearly 80% of the country's power needs. With support from Power Africa, Eswatini has set its sights on achieving energy independence through expanding generation from renewable energy sources.

Like most countries in the region, Eswatini has abundant renewable energy resources, especially from solar and wind. In the past the high cost of variable Renewable Energy (vRE) generation limited Eswatini's interest in these technologies, but with improvements in technologies and declining costs, investment in vRE is becoming more and more attractive. For Eswatini to consider a sizeable portion of its generation coming from vRE, the Eswatini Electricity Company (EEC) needed to understand the challenges utilities face when integrating vRE into the national grid.

EEC requested the USAID Southern Africa Energy Program (SAEP), a Power Africa initiative, to assist in assessing the impacts vRE integration might have on the Eswatini grid. An SAEP-developed framework was used to evaluate different scenarios, each simulating differing levels of lost generation and vRE integration. For each scenario the framework generated the frequency conditions that must be met to avoid system failure. To ensure continuity and sustainability of the work done, SAEP consultants worked with EEC, who received training and closely collaborated with SAEP during the process. EEC now has a tool for making national policy decisions on how much more vRE generation – especially solar PV – can be integrated to meet demand.

The analysis was presented to representatives from the Ministry of Natural Resources and Energy as well as the Eswatini Electricity Regulatory Authority.

The EEC convened a meeting in December of 2018, bringing together stakeholders from throughout the energy sector to discuss and to fully understand the implications of SAEP's work and the resulting conclusions and recommendations.

The Ministry of Natural Resources and Energy was especially interested in the implications for its Generation Expansion Plan. The report has given the utility more confidence in managing the high interest shown by the private sector to build renewable energy plants as independent power producers.

"The study has equipped us with the necessary skills for performing grid integration studies for variable renewable sources of electricity generation. The document is being used as a guide prior to accepting other solar projects proposed by self-generators and independent power producers."
EEC System Planning Engineer

Because of SAEP's assistance, Eswatini is now heading down a road to energy independence. With greater confidence in their capacities to manage new vRE, in June 2019 Eswatini called for bids to build an additional 40 MW of solar power capacity. This is a first step towards the nation's goal of producing 100% of all power demand by 2034, and realizing all of the foreign investment, job creation, and economic growth associated with such a program.



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SUCCESS STORY

SAEP Helping Malawi Increase Domestic Generation

Malawi has one of the most severely constrained power sectors in sub-Saharan Africa, with an electrification rate estimated to be less than 11%. The lack of availability of reliable and secure power has discouraged potential investment in the country's power sector, stunting both economic growth and social development. In response to the heightened demand for energy, the Government of Malawi has outlined various electricity generation projects to increase the current national energy capacity.

One of these projects is the Mpatamanga Hydropower Project planned to be constructed on the Shire River about 40 km west of Blantyre, which would add up to 258 MW of new generation to the country's current installed generation capacity of 439 MW. The Government of Malawi engaged the International Finance Corporation (IFC) as co-developer of the project and in July 2018, the Malawi Cabinet of Ministers approved the development of Mpatamanga as a Public Private Partnership (PPP). For additional support, the government asked the USAID Southern Africa Energy Program (SAEP), a Power Africa initiative, to provide technical advisory support and expertise in structuring and negotiating the PPP agreements. With SAEP's assistance, the Malawian government reached its first major milestone by signing a cooperation agreement with the IFC in August 2018. The agreement stipulates the conditions under which the IFC will work with the government to secure financing and to attract a reputable private partner to develop the project. In addition, SAEP supported the establishment of the Mpatamanga Hydropower Project Task Force – comprised of representatives from various government ministries, Malawi's power generation company EGENCO and the PPP – to coordinate inputs and agreements on activity timelines. Before construction can begin, the Government of Malawi and the IFC needed to formalize roles and timelines for project development.

Over a period of six months, SAEP supported the government in negotiations with the IFC on the Mpatamanga Joint Development Agreement (JDA). By facilitating focused engagements between the government and the IFC, SAEP assisted in addressing and reaching agreement on several outstanding issues in the JDA. These included verification of compliance with public procurement policies and agreement on 56 commercial principals and risk allocations that will guide the further development of the project. On April 12, 2019, representatives from the Malawian government and the IFC formalized their partnership by signing the final JDA in Washington DC, USA. The signing is a major milestone as it opens the way for the government to move forward with project development and public tender design. Ground work for the project is expected to start in 2020 after selection of a project developer and securing of required development and grant funding from lenders.

The work SAEP has done to support the IFC PPP development process will expedite the completion of the Mpatamanga project – a national development priority for Malawi's energy sector. Having Mpatamanga operational, will not only significantly add to the country's installed capacity, but will also increase access to energy supply, which will positively impact economic growth and social development.

Power Africa is proud to work with the Government of Malawi, the IFC, and the private sector to bring more power online and increase energy access in the region.

Andrew Herscowitz,
Coordinator for Power Africa



SUCCESS STORY

Malawi's Electricity Generation Company Embraces Gender Equality

SAEP supports Electricity Generating Company Limited (EGENCO) in Malawi to address gender imbalances by instilling gender-inclusive practices and promoting women to leadership roles.

Women are underrepresented in the African power sector and especially in engineering. The stigma that engineering is a predominantly male-dominated industry results in women losing interest in Science, Technology, Engineering, and Math (STEM) fields. And women who do pursue this field are often times excluded from leadership, supervisory and technical positions.

In response, Electricity Generation Company Limited (EGENCO) CEO, William Liabunya, requested support from the USAID Southern Africa Energy Program (SAEP), a Power Africa initiative, to address this issue.

Working together, EGENCO and SAEP developed a Gender and Social Inclusion Policy to help address gender issues. In addition, Malawi's National Gender Policy was included as part of the policy framework in the EGENCO Strategic Plan. And lastly, SAEP provided support to EGENCO on gender mainstreaming issues.

Specific gender equality challenges and gaps were identified and analyzed, resulting in a suite of activities that –once implemented – will help develop women for leadership roles within the utility.

To kick-off these activities, SAEP facilitated a Gender Self-Assessment Orientation Workshop. Participants included women from various departments including engineering, HR, operations and finance. Participants learned about the importance of gender equality in general and became more aware of gender issues within the energy sector. As a result, major shifts on gender

mainstreaming have taken place in EGENCO. The utility has formed an interdivisional Gender Task Force responsible for awareness campaigns to promote gender equality while continuously working to identify new challenges that need addressing. In addition, SAEP is supporting the Gender Task Force to develop Gender Equality and Social Inclusion facilitation guidelines for use in internal trainings.

And the face of EGENCO is slowly changing. In 2019:

- the utility hired their first female director, who has been appointed as Corporate Affairs Director and Company Secretary
- a female HR officer was promoted to the newly formed position of Administration and Gender Inclusion Manager
- EGENCO's female Plant Operations Technician at the Nkula Power Station was promoted to Assistant Control Engineer at the Generation Control Centre, and is the first female engineer to operate the control room

"There is definitely a future for women in EGENCO. Most of the problems we face have to do with mindsets. EGENCO and SAEP help to change the mindsets of men to accept us." **Martha Murotho, EGENCO Assistant Control Engineer**

EGENCO is committed to developing and instilling gender-inclusive practices that ensure women are hired and retained in leadership and technical positions. Future goals include employing at least three additional women in technical or engineering positions by 2020.



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SUCCESS STORY

The Temane Transmission Project is Taking Shape

Mozambique's potential to generate power is the greatest in all of Southern Africa, with access to vast potential in hydro, natural gas, wind, solar and coal resources. However, while investment for new generation exists, the country's ability to move power from generators to consumers is severely limited. As a result, only 30% of the population have access to electricity and industrial growth has been hampered due to supply constraints. With the Temane Power Plant, a 400 MW natural gas fired power plant, coming online in 2023, Mozambique must move now to build out needed transmission infrastructure.

The USD \$542 million Temane Transmission Project (TTP) is designed to evacuate power from the Temane Power Plant located in the northern part of Inhambane Province to Maputo, the nation's capital of 1.2 million people located in the south of the country, so as to service households, businesses and industrial concerns.

Construction of the 400 kV transmission line, totaling 560 kilometers, will be completed by 2023 and is the first phase of the Mozambique Integrated Transmission Backbone System (STE) Project, with a line capacity of 900 MW.

To assist Mozambique in pursuing this massive undertaking, the USAID Southern Africa Energy Program (SAEP), a Power Africa initiative, is supporting Mozambique's national utility, EDM, in bringing TTP to financial close by providing an embedded advisor to deliver long-term organizational and technical support. Starting in early 2018, the embedded advisor gives project coordination support within the TTP Project Management Office (PMO). SAEP has managed key activities in moving the project forward, including the establishment of the PMO, the review of key outputs from project consultants, and facilitation of engagements between the funders to finalize the Project Financing Plan.

Due to the complexity of the project, the procurement of an Owner's Engineer – an independent consulting firm that plays a supporting role to the technical project management – was critical.

SAEP's embedded advisor assisted the procurement process with the evaluation of shortlisted companies, the correspondent bidding phase and final selection. On 2 May 2019, the World Bank approved the appointment of the Owner's Engineer. The appointment was a critical step towards TTP advancing closer to financial close, anticipated in June of 2020.

Another milestone took place in June and July of 2019 when all financiers through board resolutions committed to their respective funding contributions. The World Bank, the African Development Bank and the Government of Norway allocated a total amount of USD \$357 million in grants and the Islamic Development Bank, OPEC Fund for International Development and the Development Bank of Southern Africa in total committed to a USD\$ 185.7 million loan.

The TTP is key to not only the 400 MW gas power plant but also to increasing opportunities for power trade among Southern African Power Pool (SAPP) countries. Despite the abundance of energy resources in the subregion, weak transmission systems remain a major constraint which will be improved by TTP and other regional interconnectors. The transmission line between Maputo and Temane will also allow greater security and availability of electricity in Mozambique for various socio-economic projects, in addition to enabling new connections to customers.



Wind turbines being constructed at Excelsior Wind Farm, Western Cape (Photos: SAEP)



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SUCCESS STORY

SAEP Supports 26 Renewable Energy Projects to Financial Close

The need to diversify and strengthen South Africa's energy mix and to increase economic growth and foreign investment prompted the South African government in 2010 to create the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP). The Department of Energy's IPP Office manages the program with the purpose to competitively procure power from the private renewable energy market.

Although REIPPPP has had positive impacts on the country's power sector and economic landscape since its start, the troubled financial situation of national utility Eskom, the buyer of the allocated power, stalled the sign-off of 27 outstanding Power Purchase Agreements (PPAs) awarded in rounds 3.5 and 4 in April 2016. After a delay of two years, the newly appointed Minister of Energy, Jeff Radebe, moved to jump-start the drive for renewables and made an aggressive push for the IPP Office to advance the financial close of these 27 renewable energy IPP projects.

To meet the expedited government timelines, the IPP Office asked the USAID funded Southern Africa Energy Program (SAEP), a Power Africa initiative, for assistance. SAEP provided training to REIPPPP staff on how to conduct due diligence work and how to complete financial reviews on all 27 proposed projects. In addition, SAEP assisted the IPP Office leadership to understand the impact on the Black Economic Empowerment (BEE) component of each project and assess the bidders' ability to conclude PPAs under the 0.77/kWh rate cap set by Eskom.

An expanded SAEP team later provided consulting support and guidance to REIPPPP staff on leading practices for completing technical and economic development assessments.

SAEP support was essential for gaining consensus between the involved parties and resulted in 26 of the proposed 27 IPP projects reaching financial close by December 2018. As the 26 projects move forward, in the coming five years South Africa will see US \$4 billion in private sector investment and 52,000 new jobs created and will realize 2,305 megawatts (MW) of new clean generation to support much needed economic growth. South Africa's Northern Cape province will receive the majority of the investment with 13 new wind and solar PV projects, followed by the Eastern Cape with four new wind projects, together with the North West Province also having four new solar PV projects.

*SAEP support will result in nearly **US \$4 billion in new investments** into South Africa's energy sector, creating close to **52,000 new jobs** and generating **2,305 MW** of energy.*



Photo: Edith is a sales agent for Vitalite, discussing parts of the training curriculum with her manager.
Photo: SAEP



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SUCCESS STORY

Sales Training Increases Solar System Sales and Connections

Despite Zambia's potential for hydropower and solar energy generation, 69% of all Zambian households have no access to electricity. What's worse, 96% of the rural population remain without power. For the Government of Zambia to meet its goal of having 66% of the population with access to electricity by 2030, there is a severe need for increased delivery of off-grid solutions through private sector players, specifically in the sale of solar home systems (SHS).

To support the government's ambitious target and to unlock the potential of the off-grid sector, the USAID Southern Africa Energy Program (SAEP), a Power Africa initiative, is providing technical assistance to private sector SHS companies to accelerate the delivery of off-grid connections. From July to September 2018, SAEP held a series of discussions with SHS companies to identify major sales challenges and areas of support.

From these discussions, SAEP found that companies struggled with developing and retaining sales talent, and with managing a sales force with a wide variation in performance. In particular, sales agents often lack the skills and technical know-how to sell a product. SAEP developed a training program to address these gaps and partnered with four leading SHS companies to deploy this training and improve their sales force effectiveness. SAEP began by conducting a month-long diagnostic to understand the operating models of the four participating SHS companies. The results were used to develop a standardized training curriculum targeting company managers and sales agents. The training curriculum was piloted in November 2018 in Zambia's Eastern province, where a total of 60 agents and nine managers were trained over a two-month period.

The results from the pilot program were positive and agents that participated in the training saw an average 25% increase in sales in December 2018 from the previous month. "Before learning about

the sales pitch in the training, I didn't even know how to talk to customers," says Edith, a SHS sales agent. Prior to participating in sales training, Edith had sold only four SHSs over a period of two months. Within two weeks of completing the sales force effectiveness training, she sold 12 units. The increase in sales favors both agents and SHS companies with companies being better positioned to recruit more agents, which will lead to even higher sales and ultimately more homes with sustainable electrical connections. "The first time that I used the [objection handling] sheet¹, I sold two systems to a pair of friends passing by," said Lilian, another SHS sales agent.

SAEP trained an additional 264 sales agents across the Eastern, Southern and Lusaka provinces between January and April 2019. Apart from the practical training sessions, SAEP also hands over all training material to companies to ensure sustainability. The SHS companies have already started to integrate the material into their own internal content for further trainings and onboarding of new staff. Through the Zambia sales force effectiveness program, SAEP has been able to impact not only communities by increasing access to electricity, but also the local sales agents by increasing their earnings and sales.

When asked about the secret to her success, Edith said, "I would advise my other agents to just apply what they learned in the training."

¹ The objection handling sheet is a module within the curriculum that lists common objections that households have to solar products and guides agents on how to appropriately respond to those objections.



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SUCCESS STORY

Improving Water Management for a Brighter Zambia

SAEP's support to ZESCO, Zambia's electric utility, in modelling water usage and managing variable renewable energy generation, has improved the utility's capacity to optimize power generation and more effectively manage load shedding.

Zambian dependence on its large hydro power stations renders the country vulnerable to power shortages in times of drought. This is being born out at present at ZESCO as insufficient rainfall the past few years and the resultant low water levels at hydro dams are impacting power generation. Since June 2019, Zambia's electricity supply company, ZESCO Limited, has been rationing electricity by implementing up to eight-hour power cuts on a daily basis.

To address the electricity shortage there are several efforts underway to bring new generation onto the grid, however, the new megawatts will not be available to the system for several years. In the interim, ZESCO reached out to the USAID Southern Africa Energy Program (SAEP), a Power Africa initiative, on how to better manage existing hydro resources to optimize power availability and limit load shedding.

In response, SAEP has provided technical advice and training on the efficient management of the electricity system. Together, SAEP and ZESCO developed an innovative system scheduling process that recognizes environmental constraints on hydro generation and forecasts the potential range of variable solar generation supplied from the solar PV plants currently operating within the Zambian grid. The variability of output from the solar plants requires that a

portion of the controllable hydro generator capacity be set aside in case it is needed to make up for lower than expected solar generation. Better forecasting of the range of variability means that less generating capacity needs to be reserved to reconcile this variability.

ZESCO and SAEP conducted extensive analysis of the characteristics of the different supply options, compiled operational data, and held regular workshops to socialize information, to gain consensus on future steps to be taken, and to train the workforce responsible for putting into action the improved management system. This resulted in the creation of a complex and innovative scheduling and water valuation model. The model evaluates different hydro dispatch schedules for a range of possible water availability scenarios, determining water values for the various cases.

ZESCO began operationalizing the model in August 2019, using it to simplify and standardize its scheduling process. The use of the scheduling model has helped ZESCO to better utilize available resources, allowing a more diverse clean energy mix and improved management of the load shedding forced upon ZESCO by the hydrological situation. In the coming year SAEP and ZESCO will continue to further refine and improve the model as the utility goes on to take ownership of the revised scheduling and dispatch process.

APPENDIX B PERFORMANCE MONITORING & EVALUATION TABLES

The Year 2 results for SAEP indicators are in the tables below.

Number of Transactions Reached Financial Closure [PA6]								
	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Written confirmation from transaction counterpart
Target	7	4	2	4	3	13	20	Note: Two transactions reached FC in Year 2. Quarter 2: Loeriesfontein Orange 75 MW Quarter 3: Salima Solar Project 60 MW
Actual	25	0	1	1	0	2	27	

(#AA) Capacity (MW) from Transactions Supported by SAEP that Achieved Financial Closure [I / PA1] ⁸								
	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Written confirmation from Financial Mobilization Memo (FMM) party PATT and SAEP transaction tracker
Target	325	1,065	86	51	150	1,352	1,677	Note: Two transactions reached FC in Year 2. Quarter 2: Loeriesfontein Orange 75 MW Quarter 3: Salima Solar Project 60 MW
Actual	2,130.38	0	75	60	0	135	2,265.38	

⁸ GCC indicator is "Clean energy generation capacity (MW) that has achieved financial closure (4.8.2-33)" This indicator includes both our target for 3,000 MWs generation and 1,000 MWs of new transmission capacity

Utilization of Risk Mitigation Tools [PA16]								
	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Written confirmation from IFI or government
Target	0	1	3	4	6	14	14	Note: Based on transactions that reach FC. All transactions that reached FC this year utilized risk mitigation tools. Quarter 2: Loeriesfontein Orange – Sovereign Guarantee Quarter 3: Salima Solar Project – Sovereign Guarantee
Actual	25	0	1	1	0	2	27	

Number of Transactions Pending Financial Closure [PA5]								
	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Power Africa Transaction Tool and SAEP transaction list
Target	9	56	56	56	56	56	56	Note: 57 transactions were pending financial close by the end of Q4 of Year 2. <i>This number is not cumulative and it excludes those transactions that have reached FC.</i>
Actual	32	38	45	57	57	57	57	

Generation and Transmission capacity (MW) pending financial closure [2 / PA2]								
	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Written confirmation from Financial Mobilization Memo (FMM) party, PATT and SAEP transaction tracker
Target	3,508	9,390	9,390	9,390	9,390	9,390	9,390	Note: SAEP is closing Q4 with a pipeline total 11,478.5 MW. Given that the actual total pipeline for Q4 also includes the transactions that have already reached financial close, the current active pipeline as of the end of Q4 is
Actual	9,390.38	9,582.38	9,578.38	10,723.38	11,478.5	11,478.5	11,478.5	
Gx	6,990.38	7,182.38	7,178.38	8,323.38	9,978.5	9,978.5	9,978.5	

Tx	2,400	2,400	2,400	2,400	1,500	1,500	1,500	<p>9,213.1 MW. The 9,213 MW figure does not include probabilities of the transactions reaching financial close before March 2022.</p> <p>The numbers listed in the Country “By the Numbers” sections above are the generation and transmission projects pending financial close that have a medium and high probability of reaching financial close before March 2022.</p> <p>The actual figure is cumulative and shows the total generation and transmission capacity pending financial closure at the end of the reporting quarter. It does not remove MWs for those that reach financial close during the period.</p>
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Number of New Grid and Off-Grid Projected Direct Connections [5 \ PA5]

	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Program records for OC4 and utility data
Target	400,000	2,175,775	2,775,775	2,775,775	2,775,775	2,775,775	2,775,775	

Number of New Grid and Off-Grid Projected Direct Connections [5 \ PA5]

	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Program records for OC4 and utility data
Actual	2,775,775	2,160,0035	2,126,238	1,988,169	3,244,333	3,244,333	3,244,333	<p>Note: Projected connections are based on access transactions. It's the remaining connections from access transactions left to be achieved (Life of Project goal for connections minus realized connections)</p> <p>On-grid</p> <ul style="list-style-type: none"> EDM: 982,500 ENDE: 1,080,000 (<i>work with ENDE started in this quarter, but the first data will be received in Year 3</i>) <p>Off-grid</p> <ul style="list-style-type: none"> Madagascar: 90,888 Malawi: 288,436 (<i>This target is set from a life of project target of 300,000 connections. This LOP number we have kept constant; however, the grantee estimate for connections is slightly lower at 130,863 for Y3Q1-Y4Q2. We are hopeful that we will reach the aggressive target of 300,000 but may need to adjust this number down in future years.</i>) Mozambique: 100,000 (<i>There are approximately 100,000 connections that can be realized moving forward for the project from the path to impact analysis. This readjustment of the project target is in addition to the realized connections of 8,068 from SolarWorks previously</i>) Zambia: 702,509

(#AB) Direct Electricity Access [4 / PA10]

	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Program records for OC4 and OC2 and utility data
Target	50,000	36,143	84,355	124,536	154,966	400,000	450,000	Note: The reported connections for Year 2 are a result of SAEP's activities in Madagascar, Malawi, Mozambique and Zambia. From Mozambique we also received our first on-grid connections for Year 2 from EDM. Off-grid: <ul style="list-style-type: none"> • Madagascar: 8,301 off-grid connections <ul style="list-style-type: none"> ○ Solar Home System sales: 3,880 ○ Lantern sales: 4,421 • Malawi: 11,564 off-grid connections <ul style="list-style-type: none"> ○ Solar Home System sales: 5,797 ○ Lantern sales: 5,767 • Mozambique: 8,068 individual off-grid connections <ul style="list-style-type: none"> ○ Solar Home System sales: 8,068 ○ Lantern sales: 0 • Zambia: 121,265 individual off-grid connections <ul style="list-style-type: none"> ○ Solar Home System sales: 103,475 ○ Lantern sales: 17,790 On-grid: <ul style="list-style-type: none"> • Mozambique: 83,507 connections <i>*Please note that these numbers changed from what was reported in the previous quarters, due to more companies submitting data this quarter and updating their data for the previous quarters.</i>
Actual	64,412	41,999	33,797	64,807*	92,103	232,705	297,117	
Off-Grid	64,412	41,999	25,224	34,906*	47,069	149,198	213,610	
On-Grid	0	-	8,573	29,900	45,034	83,507	83,507	

Number of Transactions Commissioned [PA4]								
	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: SAEP Installation Memos
Target	0	0	0	4	0	4	4	Note: SAEP did not have any transactions commissioned for this indicator in Year 2.
Actual	0	0	0	0	0	0	0	

Generation Capacity (MW) Commissioned [3 / PA3]								
	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: SAEP Installation Memos
Target	0	0	0	0	264.62	264.62	264.62	Note: SAEP did not have any transactions commissioned for this indicator in Year 2.
Actual	0	0	0	0	0	0	0	

Electricity Loss Reduction (Aggregate Losses) [6 / PA12]								
	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Data collection with utilities (survey for annual data collection)
Target	0	0	0	0	0	0	0	Note: SAEP did not anticipate reporting results for this indicator for Year 2. SAEP was not conducting any loss reduction work this year.
Actual	0	0	0	0	0	0	0	

Expected Lifetime Energy Savings from EE or Energy Conservation [7 / PA13]								
	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Program records for OC2 and OC4
Target	0	0	0	0	0	0	0	Note: SAEP did not anticipate reporting results for this indicator for Year 2.
Actual	0	0	0	0	0	0	0	

Total Public and Private Funds Leveraged by USG for Energy projects (USD millions) [I7 / PA18]

	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Grant records. Project funding records
Target	750	142	35	63.5	224	464.5	1,214,500,000	Note: Funds were leveraged for the two transactions that reached FC in Year 2. Quarter 2: Loeriesfontein Orange – USD146 million Quarter 3: Salima Solar Project – USD60 million
Actual	3,861,700,000	0	146	60	0	206	4,067,700,000	

Number of Institutions with Improved Capacity [I1]

	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Program records. Organization assessment capacity tool
Target	10	7	2	3	5	17	27	Note: SAEP reported the following activities that contributed to institutions capacity improvement in Year 2. No institutions are repeated in the counting if they were already counted in the earlier quarters for a cumulative number of institutions with improved capacity over the year. The quarters listed below are when the final deliverables or conclusion of the assistance occurred. See notes continued below
Actual	8	1	9	5	1	16	24	

Notes Continued:**Botswana BERA**

- Support the operationalization of the new Botswana Energy Regulatory Authority - Y1.01.01.22.BWA (Q2)
- Develop an updated Roadmap for BERA Activities and support organizational capacity building – Y1.01.01.22.BWA (Q3)
- BERA TOR for IT Platform to manage Licensing - Y2.01.01.09.BWA (Q3)

Botswana BPC

- 100 MW solar tender procurement RFQ support – Y2.01.04.13.BWA (Q4)

Eswatini EEC

- Work with EEC on solar tender (Lavumisa Solar) - Y1.01.04.10.SWA (Q2)
- Review and provide recommendations to EEC on Eswatini Short Term Generation Plan - Y1.01.04.14.SWA (Q2)

Eswatini ESERA

- Capacity building for ESERA staff in processing of utility rate case - Y2.01.01.11.SWA (Q3)

Lesotho LEC

- Strategic planning capabilities with financial model inclusion - Y1.02.07.01.LEC (Q1)

Madagascar

- Support ADER to manage private sector on off-grid pilots and mini-grid investments (Q2) – Y1.04.06.10.MDG
- Assist EOSOL with Financial Model - Y1.04.01.02.REG (Q2)
- Baobab+ improved sales - Y1.04.06.01.REG (Q2)

Malawi MERA

- Support MERA review tariff application - Y1.01.01.16.MWI (Q2)

SAPP

- Provide capacity building and training for SAPP market participants with specific focus on balancing and ancillary markets - Y1.03.02.03.REG (Q2)

RERA

- RERA sustainable training business model - Y1.05.01.09.REG (Q2)
- Assistance to RERA in the development of comprehensive set of Regional KPIs - Y2.02.07.02.REG (Q4)

SADC

- Assist SADC with updates and reviews of TOR for Regional Gas Masterplan (Year 1) - Y2.01.05.01.REG (Q4)

Zambia ZESCO

- ZESCO enhanced Project Management capabilities - Y1.02.02.13.ZMB (Q2)
- ZESCO live training on nodal forecasting tool in preparation of IFC scaling solar projects coming online for systems ops - Y2.02.03.01.ZMB (Q3)

Zambia SHS companies

- Sales effectiveness training for 3 SHS companies (Vitalite, Kazang, SunnyMoney) - Y2.04.06.02.ZMB (Q3)

Malawi EGENCO

Number of Institutions with Improved Capacity [11]

	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Program records. Organization assessment capacity tool
<ul style="list-style-type: none"> Support EGENCO to develop gender mainstreaming program - Y2.02.03.08.MWI (Q3) and SunnyMoney (Q3) <p>This assistance has provided EGENCO with tools, templates, training, and a solid foundation for implementing, executing, building, and sustaining institutional capacity - Y2.02.03.07.MWI (Q4)</p>								

Number of Women in Energy Sector Leadership Roles (Custom) [12]

	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Program records. Energy institution records and interviews
Target	2	0	1	2	1	4	6	Note: Three women were appointed into positions of leadership for the year, as a result of SAEP support. All three are from EGENCO and their positions are: <ul style="list-style-type: none"> 1 x Director Corporate Affairs/Company secretary 1 x Gender Advisor 1 x Engineer
Actual	0	0	0	3	0	3	3	

(#Y) Number of Laws, Policies, Strategies, Plans, or Regulations Officially Proposed, Adopted, or Implemented [8 / PA15]

	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Record of laws, policies, strategies, or regulations
Target	6	4	1	3	0	8	14	Note: SAEP reported the following laws, policies, strategies or regulations proposed and adopted in Year 2 Quarter 1:

								<p>Lesotho:</p> <ul style="list-style-type: none"> Revised LEC Strategic Plan (Proposed) including users guide to Basic Financial Modelling for Strategic Planning - Y1.02.07.01.LEC <p>Quarter 2:</p> <p>Eswatini</p> <ul style="list-style-type: none"> EEC Rate Case Cost of Capital recommendation - Y2.01.01.12.SWA (Proposed & Adopted) <p>Botswana:</p> <ul style="list-style-type: none"> BERA: RAB Recommendation - Y2.01.01.08.BWA (Proposed) BERA: Cost of Capital Recommendation - Y2.01.01.08.BWA (Proposed) BERA: Depreciation Recommendation - Y2.01.01.08.BWA(Proposed) BERA: Maintenance Adjustment Recommendation - Y2.01.01.08.BWA (Proposed) BERA: Manpower Cost Adjustment Recommendation – Y2.01.01.08.BWA (Proposed) <p>Quarter 3:</p> <p>Eswatini:</p> <ul style="list-style-type: none"> ESERA customer connection charge regulation framework - Y2.01.01.20.SWA (Proposed & Adopted) <p>Namibia:</p>
Actual	7	1	7	3	1	12	19	

								<ul style="list-style-type: none"> ECB tariff methodology for mini-grids - Y2.01.01.16.NAM (Proposed) <p>Quarter 4: Eswatini:</p> <ul style="list-style-type: none"> The Electricity New Capacity Power Generation Procurement Regulations - Y2.01.04.02.SWA (Proposed)
Number of Reports, Analysis, Reviews, Action Plans, Tools Developed and Campaigns and Trips Implemented (Custom) [9]								
	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Program records
Target	60	10	12	12	11	45	105	Note: The reports mentioned below are for Q4 only.
Actual	46	20	12	5	7	44	90	<p>SAEP produced the following reports in Q4:</p> <ul style="list-style-type: none"> Procedures Manual for a New Performance Management Process - Y2.02.03.07.MWI RERA Regulatory Governance e-module- Y2.05.02.04.REG Assistance to EGENCO on balanced scorecard on HR issues (Task 5) - Y2.02.03.07.MWI ESCOM Maintenance 400kv training needs assessment and proposed training plan - Y2.03.05.05.MWI SACREEE Operational Guideline - Y2.05.02.05.REG SAPP New Entrant Guideline - Y2.03.04.01.REG Summary Report: SAEP Support to Mercy James Clinic - Y2.04.06.09.MWI

Number of People Receiving Training in Global Clean Energy [13a]								
	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Training Attendance Sheets
Target	45	67	10	40	0	117	162	Note: The numbers reported for trainings are for the whole of Year 2. For a comprehensive list of all the trainings, please see <i>Appendix E: Participant Training Report</i> .
Actual	266	52	376	164	30	622	888	
Male	217	43	321	134	22	520	737	
Female	49	9	55	30	8	102	151	

Number of Person-Hours of Training [13b]								
	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Training Attendance Sheets
Target	360	1,364	400	480	0	2,244	2,604	Note: The numbers reported for trainings are for the whole of Year 2. For a comprehensive list of all the trainings, please see <i>Appendix E: Participant Training Report</i> .
Actual	2,097.5	911	2,450	932	960	5,253	7,350.5	
Male	1,666	748	2,137	797	704	4,386	6,052	
Female	431.5	163	313	135	256	867	1,298.5	

(#X) Percentage of RFP Section F Deliverables Submitted in a Timely Manner (Custom) [10]

	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Program records
Target	100%	100%	100%	100%	100%	100%	100%	Note: SAEP reached the assigned target for Year 2 on this indicator.
Actual	100%	100%	100%	100%	100%	100%	100%	

Kilometers of Power Lines Reached Financial Close [PA8]

	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Written confirmation from FMM part
Target	0	0	218	0	0	218	218	Note: The Malawi-Mozambique interconnector was estimated to reach financial close in Q2, hence the target was 218 in Q2, but this has not yet happened. The FC date has been moved to December 31, 2019 which is Q1 of Year 3.
Actual	0	0	0	0	0	0	0	

National Energy Mix Showing % of MWs from Clean Energy Technologies in Each Country [PA7]

	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: PA PIRs; RERA national data
Target	0	0	0	0	0	0	0	Note: SAEP did not anticipate reporting results for this indicator for Year 2. This is provided when required.
Actual	0	0	0	0	0	0	0	

Kilometers of Power Lines Constructed or rehabilitated [PA9]

	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Written confirmation from FMM part
Target	0	0	0	0	0	0	0	Note:

Kilometers of Power Lines Constructed or rehabilitated [PA9]								
	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Written confirmation from FMM part
Actual	0	0	0	0	0	0	0	SAEP did not anticipate reporting results for this indicator for Year 2. No transmission lines were commissioned this year.

Greenhouse Gas (GHG) Emissions Reduced, Sequestered, and/or Avoided (thousand tCO ₂ e) [PA14]								
	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Program records, using the USAID CLEER Tool
Target	0	0	0	0	0	0	0	Note: SAEP did not anticipate reporting results for this indicator for Year 2. No projects in the pipeline have been constructed and commissioned.
Actual	0	0	0	0	0	0	0	

US Exports Supplied for Clean and Cleaner Energy Projects [PA17]								
	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Program documents
Target	0	0	0	0	0	0	0	Note: SAEP did not anticipate reporting results for this indicator for Year 2. This indicator is linked to projects reaching financial close and/or commissioning and there were none
Actual	0	0	0	0	0	0	0	

Partner Commitment Tracking [PA19]								
	Year 1 Total	FY19 Q1	FY19 Q2	FY19 Q3	FY19 Q4	Year 2 Total	Performance to Date	Data Source: Program documents
Target	0	0	0	0	0	0	0	Note: SAEP did not anticipate reporting results for this indicator for Year 2.
Actual	0	0	0	0	0	0	0	

APPENDIX C TRANSACTIONS TRACKER⁹

In Year 2, SAEP's Transaction Advisory Team supported the following projects in support of Program goals. In addition, SAEP initiated conversations with multiple other developers. The outcome of those engagements may result in additional projects being added in Year 3. This is a list of transactions that SAEP is actively working on and tracking with an intention to support.

Project name	Country	Technology	Project size [MW]	Current Status	Estimated Financial Close Date
BPC Solar PV	Botswana	Solar	100	SAEP continues to provide support to BPC as procurement advisors as they work to advance the project. The project should move forward in the next quarter through committee of the Ministry, BPC and BERA advancing the RFP. Transaction is being re-scoped and meetings need to be set up with Ministry and BPC to discuss the next phase. Christine Covington put together a presentation to discuss proposed schedule and de-risking options for the project. SAEP helped with the RFQ development which was released on 1 August 2019 and closed on 30 September 2019. The RFP has also been prepared. Other information is procurement sensitive and confidential.	12/31/2020
GBA Swaziland Riverbank	Eswatini	Solar	10	SAEP completed TTS on 15 May 2018. SAEP's support was focused on increasing the robustness of the project's financial model, in particular how the project's storage component enhances the underlying project economics, while providing EEC (the utility) a level of dispatchability. The financial model delivered to the client enables him to adjust key project-level assumptions to optimize project economics (in particular, the IRR to investors) and determine the most appropriate tariff to charge the off-taker. The model calculates unique storage-related outputs and revenue streams that currently have no precedent to follow. On 26 April 2019, the project sponsor submitted a new "Registration of Interest for Participating in the Development of New Generation Capacity" to ESERA. This latest request from the state indicates that the previous request in December 2018 may have not been successful. On 7 June 2019, ESERA released a new Request for Qualification for Procurement of New Generation Capacity of 40 MW of solar power, excluding storage. SAEP is trying to determine if GBA Swaziland submitted a bid into this RFQ.	12/31/2020
EEC Lavumisa	Eswatini	Solar	15	SAEP supported EEC when they were working to finalize the project and supported with a vRE study. EEC analyzed sourcing finance for the project by two options: a corporate raise to include T&D investments or solar project finance raise for Lavumisa only. EEC decided to include the project in a corporate raise. In July 2019 it was announced that Eswatini has signed a USD \$16 million contract with South African based EPC company, CONCO, a subsidiary of Consolidated Infrastructure Group (CIG) Limited, for the construction of a 10 MW solar power plant. The project will be financed by the Eswatini Pension Fund and local banks. The land has been secured and an EIA has been completed. ESERA is in the process of issuing a license for the project.	Pension fund payment; SAEP working to finalize confirmation of FC date 07/30/2019

⁹ The transactions presented here are transactions that we are currently designing transaction advisory scopes for or are currently providing targeted transaction support to.

Project name	Country	Technology	Project size [MW]	Current Status	Estimated Financial Close Date
Neo I - OnePower	Lesotho	Solar	20	<p>In May 2019 Neo I received a grant from the United States Trade and Development Agency (USTDA) to support feasibility studies for the 20 MW solar PV project.</p> <p>In June 2019 Neo I submitted an updated financial model to LEC. LEC provided this model to SAEP. SAEP is reviewing the Neo I financial model to understand how pricing compares and competitiveness to other solar PV generation options that LEC is currently considering.</p> <p>While the Power Purchase Agreement for the project was initiated in 2017, negotiations on the draft Implementation Agreement between the developer and the Government of Lesotho (through the Ministry of Finance) is commencing October 2019.</p> <p>In addition to financial model review, SAEP is examining generation planning with LEC as well as the impacts of renewable generations on Lesotho's national grid.</p>	12/31/2020
Mohale's Hoek	Lesotho	Solar	30	<p>Phanes has signed a non-binding MOU with the Government of Lesotho for the Mohale's Hoek project, though LEC (the utility) does not currently have the project in its generation planning. The next step is for Phanes to sign a binding MOU with the Ministry of Energy, after which Phanes will enter into PPA negotiations with LEC. SAEP is remaining in contact with Phanes as it progresses its conversations with the Government, and is attempting to better understand the Government's intentions with respect to new renewable projects.</p>	12/31/2020
ANKA (Previously EOSOL Madagascar)	Madagascar	Solar	2300 Seg 1 5900 Seg 2 2800 Seg 3 connections	<p>In April 2019, ANKA asked SAEP for additional support in addressing a USD \$1 million funding gap for ANKA'S mini-grids under API. SAEP agreed to assist ANKA to raise the funds required. SAEP has proposed various funding options.</p> <p>ANKA managed to secure all the funding they need for segment 1 of their AP2 project. One of their existing financiers, who had already committed a portion of the grant funding they need, decided to increase the grant amount to close the gap.</p> <p>Previous EOSOL Merged with a smaller mini-grids company and will now trade as ANKA. ANKA needs SEAP assistance for segments 2 & 3 of AP2 project and is currently preparing the SSIR.</p> <p>ANKA is of the opinion that the funders that SAEP introduced will benefit her next funding "tour" (planned COD of 2021).</p> <p>SAEP to potentially assist ANKA with a structured plan for engaging funders for segments 2 & 3.</p> <p>ANKA has 8 grids under construction and when they are commissioned, they will operate a total of 12 mini-grids with a total installed generation capacity of 350kWp. None of these new concessions were part of API and AP2</p> <p>ANKA needs support from SAEP to help them to "tell their story" as they apparently have not been great at selling their successes and need help with this aspect.</p> <p>SAEP completed TTS in April 2018, where they developed a financial model to analyze expansion projects for EOSOL, a mini-grid developer, and made recommendations on capital sources.</p>	Segment 2: 12/31/2020
Themis Sahofika	Madagascar	Hydro	192	<p>SAEP is supporting Themis in their capital raise for a 100 km transmission line needed to connect a proposed 192 MW hydro plant in Southern Madagascar to the Malagasy grid. This transmission line will allow for the additional generation capacity to be connected to the grid and for several new connections to communities close to the line. During Q4, the SAEP team continued their support of the capital raise for the ancillary infrastructure for the Sahofika</p>	3/31/2020

Project name	Country	Technology	Project size [MW]	Current Status	Estimated Financial Close Date
				<p>Hydropower Project. The Team issued an addendum to the funding roadmap containing a list of potential lenders and contact persons and submitted this to Themis.</p> <p>During Q3, SAEP drafted a funding roadmap that highlights the approach Themis should follow in the capital raise. In addition, SAEP supported Themis in finalizing a REOI. This document will be shared with all identified lenders to allow them to evaluate if they are interested in engaging with the project. On 14 June 2019, SAEP provided Themis with a contact list of identified lenders to approach as well as the project teaser document and introductory language to be used. Themis will lead the engagements with lenders, but with full support from SAEP.</p> <p>The Team met with Themis management team in Abidjan on 25 June 2019 to discuss the funding roadmap and way forward, as well as exploring other barriers to financial close where the Team may provide support. Themis is currently deciding on their go-to-market approach.</p>	
Akuo Energy	Madagascar	Solar PV	2.9	<p>The objective of the 2.9 MW Akuo Energy Solar PV project (the “Project”) is the development of a 2.9 MW Solar PV facility to replace current HFO-LFO generated power. This will assist in reducing the tariffs payable by Jirama to Enelec on the current PPA between the entities. With the Solar PV plant, the operator can also reduce the operating time of HFO&LFO plant. This will contribute to lower maintenance cost and, with the fuel offset, potentially reduce the subsidies to the Jirama in Toliary (where the Akuo will implement this project).</p> <p>The intended project is an “innovative” solar PV farm of 2.9 MWp with installation of the containerized solution Solar GEM, that has been deployed in Indonesia in a smaller scale and it has proven its robustness. This solution has been chosen because it can be deployed quickly and it gives a strong warranty against the risk of non-payment from JIRAMA, as it is removable, can be folded back and deployed elsewhere.</p> <p>An NDA has been signed between the SAEP and Akuo. The SSIR was agreed and the QTAT in preparation. SAEP has provided Akuo with a list of potential debt, grant & equity financiers.</p>	12/30/2020
Mpatamanga Hydro Electric Project	Malawi	Hydro	350	<p>The start of a public procurement process for a developer for the Mpatamanga Hydro has been given the ‘green light’ 2 October 2019.</p> <p>During a workshop hosted by SAEP in Johannesburg, from 25 to 27 September 2019 with the Govt of Malawi (GoM), the International Finance Corporation (IFC) and legal advisors for both teams, specialist developer SN Power presented various results from technical studies. These included options for technical optimization, revised costing and generation forecasts for the updated project design, and additional detail on the implementation and impact of the proposed regulating dam. Their presentation concluded that “[the] Project is ready to start the tender process.” The work completed by SN Power allows for the company to formally exit the development process and for the tender to be launched in November 2019. The procurement process will feature a one-stage Request for Proposal (RFP) to identify a preferred bidder by March 2020.</p> <p>SAEP facilitated multiple rounds of negotiations on the JDA between the IFC and the GoM. This allowed for the eventual signing of the JDA between the IFC and Malawi in Washington DC, USA on 12 April 2019. Following the signing of the JDA, SAEP’s support shifted to the procurement of required advisors to the government.</p>	12/31/2020

Project name	Country	Technology	Project size [MW]	Current Status	Estimated Financial Close Date
Golomoti Solar PV	Malawi	Solar	18	<p>No updates from last quarter</p> <p>On 23 April 2019, JCM enquired if the scope of SAEP's planned embedded advisor to ESCOM could extend into developing policy to include battery storage in future projects (like Golomoti). This is intended to develop ESCOM into a capable counterpart for JCM to approach in negotiations on adding storage to their existing projects (like Golomoti). JCM signed a PPA with ESCOM on 14 September 2018 for the solar component of the Golomoti project (PPA does not cover the storage component of the project; that may be addressed later in a revised PPA). The USTDA grant to cover costs through FC (including feasibility, ESIA) was awarded. JCM will begin overall feasibility study for Golomoti by the end of October 2018.</p>	12/31/2020
				<p>SAEP completed TTS in early November 2018, following development of a financial model for an 18 MW solar PV plant including 5 MW of chemical storage.</p> <p>Current status:</p> <ul style="list-style-type: none"> • PPA for the project was signed on 14 September 2018 • The inclusion of storage required a novel modeling approach, as there is no precedent for such revenue streams and loss calculation in existing models. The project will also require unique PPA solutions that may set the basis for future storage off-take agreements in the region • Initial discussions with funders indicated that there is little to no appetite for funding storage as it is still a long-term technology which has not been seen completing a full life-cycle on a commercial scale. The funding structure for this project will therefore be broken into a PV entity that will utilize commercial funding and a storage entity that will seek DFI funding • JCM added a request for capacity in the model to assist them with determining the financially optimal size of the project's storage component <p>The financial model will enable JCM to optimize project economics, by seeing the effects of pulling project-level levers on the tariff and expected returns from the project. The model will also be an aide to demonstrate project credibility and bankability to prospective equity investors and debt financiers.</p>	
Nkhotakota Solar	Malawi	Solar	21	<p>In September 2019, the site preparation has started - not formal construction. OPI and Phanes still in negotiations with GoM on expatriation of funds and potential currency convertibility issues.</p> <p>The Electricity Supply Corporation of Malawi (ESCOM) Limited has revealed that it will be adding 21 MW of solar power to the national power grid. This was revealed at a Power Purchase Agreement (PPA) signing ceremony in Blantyre in February 2019, where ESCOM signed the agreement with solar power producing company, Phanes Energy Renewables Nkhotakota Limited.</p> <p>Phanes is the third company to sign a power purchase agreement with ESCOM. OPIC has approved a USD \$50 million loan for the development, construction and operation of a solar PV power project developed by Phanes Group and ResponsAbility. This is one of the four projects selected and is located in Nkhotakota.</p>	6/30/2020

Project name	Country	Technology	Project size [MW]	Current Status	Estimated Financial Close Date
Malawi-Mozambique Interconnector	Malawi	Transmission	1000	On 11 April 2019, the Governments of Mozambique and Malawi signed five technical and commercial agreements in Malawi aimed at facilitating the construction of the grant-funded Mozambique–Malawi interconnector. Despite an estimated FC of December 2018, the project has a number of milestones to meet before FC can be reached. The WB project team is waiting on ROW clarification on the Mozambican side to start with the RAP. A census and three public consultations need to be completed and MITADER needs to approve the EIS and RPF which will take between six to eight months after the Council of Ministers' decision on ROW for the RAP to be completed. The revised FC date is December 2019 and SAEP continues to engage ESCOM and the WB to track the project progress and to identify areas where SAEP can provide assistance. Construction should therefore be expected to start in the year 2020 for a period of 2 years, pushing the Commercial Operation Date to around 2022.	12/31/2019
Nchalo Solar IPP Project	Malawi	Solar	10	Illovo Sugar Malawi (ISM) wishes to procure a 20-year PPA with third-party power producer for 10-15 MW. The installation will be sited on the Nchalo Sugar Estate, on land owned by ISM. ISM will be the sole off-taker with a Business to Business (B2B) arrangement. The power from the solar PV plant will feed directly into the ISM-owned substation, after the ESCOM meter and into the ISM-owned grid. ESCOM will continue to feed power to the sugar estate when the solar plant is not capable of doing so. The purpose of the project is to offset expensive utility power and augment power during the hot dry months when ESCOM "load-limits" ISM. Illovo evaluated bids from third party producers, and have selected a preferred bidder for the development of the solar plant. Other information is confidential.	12/31/2020
Temane Transmission Project (TTP)	Mozambique	Natural Gas	400	The Power Africa-supported TTP achieved a significant milestone on 28 August 2019 when all the funding agreements were signed. The TTP includes construction of ~560 km of single-circuit 400 kV high-voltage transmission and three new substations connecting Central Termica de Temane (CTT) IPP via Vilanculos to Maputo, and will form a key part of Mozambique's national transmission backbone. The World Bank, AfDB and the Government of Norway allocated a total amount of USD \$357 million in grants, and the Islamic Development Bank (IsDB), OPEC Fund for International Development (OFID) and the Development Bank of Southern Africa (DBSA) in total committed USD \$185.7 million in loans. Since March 2018, SAEP has played an integral role in managing the TTP Project Management Office (PMO) by providing an embedded Project Coordinator to support the development of the 400-kV project. Construction is expected to begin in June 2020 and the line and substations are scheduled to be operational by the end of 2023.	12/30/2020
Nacala LPG-to Power	Mozambique	LPG	50	SAEP followed up in September 2019 and Mr. Brown confirmed the need for SAEP support. SAEP is awaiting the updated SSIR. After meeting with Hugh Brown, Developer at Nacala Power Limitada, SAEP shared an NDA and SSIR with Nacala on 25 June 2019. The NDA has been signed and a draft SSIR has been prepared. SAEP is awaiting receipt of the SSIR from Hugh Brown, Nacala Power Limitada. Potential SAEP assistance TBC but could include: <ul style="list-style-type: none"> - SAEP to assist in discussions with the Government of Mozambique and EDM - Project PIM/Teaser: SAEP to scrutinize and provide comments/inputs for potential improvement of the project PIM/teaser 	12/31/2021

Project name	Country	Technology	Project size [MW]	Current Status	Estimated Financial Close Date
- Potential financiers: SAEP to assist with a list of potential financiers, debt and equity					
Mandimba Solar	Mozambique	Solar	50	Phanes is in negotiations with EDM in connection with the Mandimba solar project. The next step on the project is to get to PPA term sheet with EDM. After the term sheet is signed, Phanes will enter into a Framework Agreement with the Government of Mozambique, after which a PPA will be negotiated and signed between Phanes and EDM. SAEP has been in touch with Phanes regarding the project, but until further progress is made it does not appear SAEP assistance is required.	6/1/2021
Lichinga Solar	Mozambique	Solar	23	Phanes is in bilateral negotiations with EDM in connection with the Lichinga project. The next step on these projects is to get to PPA term sheet with EDM. After the term sheet is signed, Phanes will enter into a Framework Agreement with the Government of Mozambique, after which a PPA will be negotiated and signed between Phanes and EDM. SAEP has been in touch with Phanes regarding the project, but until further progress is made it does not appear SAEP assistance is required.	6/1/2021
Naamacha Wind Farm	Mozambique	Wind	60	There are no updates during Q4 as we are waiting for wind data to be collected. The model has been developed according to EleQtra's requirements (as described above) and was agreed on by EleQtra and SAEP; the model was finalized and delivered on 16 November 2018. The project was able to obtain USD \$2 million in USTDA grants and USD \$400,000 from AfDB for legal fees were awarded to the project for use during this calendar year. Latest communication from EleQtra on 28 May 2019 disclosed that the project has: <ul style="list-style-type: none"> • Held two rounds of the community consultations for the land rights process • Installed the met mast in June by the FCT under supervision of Vaisala and Worley Parsons • Wind studies are ongoing and progressing well (ESIA, technical studies, logistics, etc.) • Drafted the screening report to launch the EIA process • The bird and bat monitoring campaign has kicked off and the first few months are reporting no endangered or vulnerable species in the project area • Ongoing discussions with EDM and MIREME on permits and interconnection assumptions • Legal advisory formally contracted to a consortium of Sal & Caldeira and DLA Piper (UK) • Kicked off the RFP for the geotechnical surveys 	2/28/2021
Wonderkop Smelter	South Africa	EE	40	SAEP last spoke with the developer, Nico Smith of DevConsult, in August 2019 to get an update on the project. The project off-taker, Glencore, is moving forward slowly, and it does not appear that SAEP assistance at present is necessary. SAEP is regularly following up with regards to project status and progress.	7/31/2020
EDF-Innowind: Scarlet Ibis	South Africa	Solar	15	Approached IDC and there is appetite but may be too big to provide the full amount of project finance debt. Project on hold until IRP and schedule 2 amendment are finalized. Will likely close 6-12 months after IRP release if the DoE continues to support 200 MW of non-REI4P subnational RE allocated in the previous IRP draft.	10/1/2020

Project name	Country	Technology	Project size [MW]	Current Status	Estimated Financial Close Date
				EDF has signed a PPA with PowerX.	
Redstone Solar Thermal Power Project	South Africa	Solar	100	SAEP provided technical assistance to IPP office. This transaction is close to reaching FC. Megawatt estimates based on latest figures from REIPPP estimates for FC. One transaction, the 100 MW Redstone Concentrated Solar Power (CSP) Power Project: 100 MW is pending FC while and 26 other transactions with a total of 2205.38 MW (non CSP projects) reached FC.	Estimated 7/31/2019 (This will not be reported as FC until further details are collected on this project)
Plettenburg Bay	South Africa	Waste-to-Power Project	20	SAEP spoke with the developer of this project, Nico Smith of DevConsult, in August 2019 to get an update regarding project status. The development of the project requires that the municipality sign a Letter of Intent (LoI) with respect to the various streams of organic waste that would be utilized as fuel for the power generation facility. DevConsult is waiting for this LoI to be signed, and at this point pre-feasibility studies could commence. Until such time as the LoI is signed, SAEP assistance is not required. SAEP will continue to follow up with the developer.	12/30/2021
Ngonye Falls Hydro	Zambia	Hydro	180	There is no Q4 update. Western Power Company is a Zambian independent power producer (IPP) developing the 180 MW Ngonye Falls hydroelectric power station along the Zambezi River at Ngonye Falls in the Senanga and Sioma Districts of Western Province.	12/31/2020
GET FiT Zambia Round 1	Zambia	Solar	120	SAEP has an embedded advisor supporting the GETFiT Secretariat with this solar round. There are concerns by developers to move forward given the current ZESCO financial situation and uncertainty around the support the government will provide. Zambia received a USD \$34.8 million full funding commitment from the German development bank KfW to implement Round 1 of the Program. The funding is to be provided to the GET FiT (Global Energy Transfer Feed-in Tariffs) Program. GET FiT Zambia is a cooperation Program between the Government of Zambia, ZESCO Limited, the Energy Regulation Board (ERB), the African Trade Insurance Agency (ATI) and KfW. It focuses on the promotion of small grid-connected RE generation projects between 1 to 20 MW and is expected to connect an additional 200 MW of RE facilities to the national grid over the next five to seven years.	12/31/2020
GETFIT Hydro - Mini Hydro	Zambia	Hydro	100	Bidders have submitted bids and the GET FiT Secretariat are currently evaluating the bids. SAEP has successfully completed TTS of the Energy Regulation Board (ERB) of Zambia request for technical assistance in determining feed-in-tariffs for mini-hydro projects, differentiated by size. On 6 May 2019, GET FiT Zambia announced the 30 pre-qualified bidders for round two. SAEP reached out to the ERB on 10 June 2019 for a status update and the ERB expressed interest in a refresher training session on the use of the financial model. This is currently being discussed with ERB. The ERB initially requested: <ul style="list-style-type: none"> • An analysis of available methodologies to calculate a REFiT • Amendment/re-building of the model as necessary • Identifying relevant model inputs and their values • Capacity building in the development and use of the ultimate tariff determination model 	12/31/2020

Project name	Country	Technology	Project size [MW]	Current Status	Estimated Financial Close Date
ZTK Interconnector	Zambia	Transmission	500	In response to the request by the Zambian Ministry of Energy's PS, Brigadier-General Emeldah Chola, for assistance in advancing the ZTK interconnector project, SAEP drafted a proposal on the role the program could play on the project. SAEP submitted the proposal to the PS on 7 February 2019 and shared the proposal with OPPPI, SAPP and EAPP. The OC3 Lead and OC3 Deputy Lead met with the SAPP Coordination Centre Manager, Mr. Stephen Dihwa, and Chief Engineer, Mr. Alison Chikova, on 9 May 2019 in Harare, Zimbabwe to begin to socialize the proposal and solicit SAPP buy-in on SAEP's role in the project. Following the meeting, SAEP has revised the proposal for submission to SAPP. SAPP will then submit the proposal to the newly established SAPP and EAPP Interconnections Operating, Planning, and Markets Committee (IOPMC) and Operations Readiness Implementation Team (OTIR) at a 4 July 2019 meeting where the two committees will discuss progress on activities they are working on. Ms. Jamila Kombe from the EAEP will begin to socialize the proposal with the EAPP when she meets with the Secretary General of EAPP, Eng. Lebbi Changullahat, in July 2019.	12/31/2020

APPENDIX D TRANSACTIONS REACHED FINANCIAL CLOSE

The projects listed below in bold reached FC in Year 2.

Code	Project Name	Country	Technology Used	MW	Project Sponsor	Financial Intermediary	Date of Financial Closing	Risk Mitigation Tools	Female Ownership
TR-SA-036	Aggeneys Solar	South Africa	Solar PV	40.00	Biotherm	Nedbank	23-Jul-18	Sovereign Guarantee	No
TR-SA-063	Bokamoso Solar Park	South Africa	Solar PV	67.90	SunEdison	ABSA	31-Jul-18	Sovereign Guarantee	No
TR-SA-094	Copperton Wind Farm	South Africa	Wind	102.00	Gestamp	Standard Bank	31-Jul-18	Sovereign Guarantee	No
TR-SA-062	De Wildt Solar Park	South Africa	Solar PV	50.00	SunEdison	ABSA	31-Jul-18	Sovereign Guarantee	No
TR-SA-061	Droogfontein 2 Solar Park	South Africa	Solar PV	75.00	SunEdison/Old Mutual	Nedbank	23-Jul-18	Sovereign Guarantee	No
TR-SA-100	Dyason's Klip 1	South Africa	Solar PV	75.00	Scatec Solar	Standard Bank	4-Apr-18	Sovereign Guarantee	No
TR-SA-101	Dyason's Klip 2	South Africa	Solar PV	75.00	Scatec Solar	Standard Bank	4-Apr-18	Sovereign Guarantee	No
TR-SA-034	Excelsior Wind	South Africa	Wind	31.90	Biotherm	Nedbank	23-Jul-18	Sovereign Guarantee	No
TR-SA-099	Garob Wind Farm	South Africa	Wind	135.90	Enel	Nedbank/ABSA	31-Jul-18	Sovereign Guarantee	No
TR-SA-033	Golden Valley Wind	South Africa	Wind	117.72	Biotherm	Nedbank	23-Jul-18	Sovereign Guarantee	No
TR-SA-058	Greefspan PV Power Plant No. 2 Solar Park	South Africa	Solar PV	55.00	AE AMD/SunEdison	ABSA	31-Jul-18	Sovereign Guarantee	No

Code	Project Name	Country	Technology Used	MW	Project Sponsor	Financial Intermediary	Date of Financial Closing	Risk Mitigation Tools	Female Ownership
TR-SA-024	Kangnas	South Africa	Wind	136.70	Lekela/Mainstream	ABSA	30-May-18	Sovereign Guarantee	No
TR-SA-020	Karusa Wind Farm	South Africa	Wind	139.80	Enel	Nedbank/ABSA	31-Jul-18	Sovereign Guarantee	No
TR-SA-035	Konkoonsies II Solar	South Africa	Solar PV	75.00	Biotherm	Nedbank	23-Jul-18	Sovereign Guarantee	No
TR-SA-098	Kruisvallei Hydro	South Africa	Hydro	4.70	HI Capital, Building Energy	RMB	31-Jul-18	Sovereign Guarantee	No
TR-SA-073	Loeriesfontein Orange (Sol Cap orange)	South Africa	Solar PV	75.00	Solar Capital	Standard Bank	31-Dec-18	Sovereign Guarantee	No
TR-SA-097	Ngodwana Energy	South Africa	Biomass	25.00	Sappi	Nedbank/ABSA	12-Apr-18	Sovereign Guarantee	No
TR-SA-067	Nxuba Wind Farm	South Africa	Wind	138.90	Enel	Nedbank/ABSA	31-Jul-18	Sovereign Guarantee	No
TR-SA-021	Oyster Bay Wind Farm	South Africa	Wind	140.00	Enel	Nedbank/ABSA	31-Jul-18	Sovereign Guarantee	No
TR-SA-025	Perdekraal East	South Africa	Wind	107.76	Mainstream	ABSA	30-May-18	Sovereign Guarantee	No
TR-SA-066	Roggeveld	South Africa	Wind	140.00	Building Energy	RMB	4-Apr-18	Sovereign Guarantee	No
TR-MW-022	Salima Solar	Malawi	Solar	60.00	JCM Power	100% Equity	30-Jun-19	Sovereign Guarantee	No
TR-SA-095	Sirius Solar PV Project One	South Africa	Solar PV	75.00	Scatec Solar	Standard Bank	4-Apr-18	Sovereign Guarantee	No
TR-SA-022	Soetwater Wind Farm	South Africa	Wind	139.40	Enel	Nedbank/ABSA	31-Jul-18	Sovereign Guarantee	No
TR-SA-043	Waterloo Solar Park	South Africa	Solar PV	75.00	SunEdison	ABSA	31-Jul-18	Sovereign Guarantee	No

Code	Project Name	Country	Technology Used	MW	Project Sponsor	Financial Intermediary	Date of Financial Closing	Risk Mitigation Tools	Female Ownership
TR-SA-023	Wesley-Ciskei Wind Project	South Africa	Wind	32.70	Innowind	Standard Bank	4-Apr-18	Sovereign Guarantee	No
TR-SA-041	Zeerust Solar Park	South Africa	Solar PV	75.00	SunEdison/Old Mutual	Nedbank	31-Jul-18	Sovereign Guarantee	No
TOTAL				2,265.40					

APPENDIX E PARTICIPANT TRAINING REPORT

SAEP's training participant numbers and training hours exceeded targets because significantly more participants attended trainings for some of the counterparts. EGENCO performance management and competency frameworks training as well as some of the SFE trainings in the field were among these over sub-subscribed trainings. In addition, the Program did not originally estimate completing a workshop on DSM and EE in Namibia.

Country	Training & Capacity Building Activity	Date	# of Males	# of Females	Total # of participants	Hours of Training	Person-Hours of Training
Regional	Capacity building for Quality of Supply	13-Nov-18	21	4	25	24	600
Regional	Capacity building to SAPP for vRE integration	10-Oct-18	14	4	18	16	288
Zambia	Load Forecasting	26-Oct-18	8	1	9	2.5	22.5
Namibia	Capacity Building Training Workshop on Developing a National DSM and EE Policy Framework	28-Feb-19	23	5	28	2	56
Malawi	Advisor to assist ESCOM to prepare to operate in an interconnected system and at 400kV: (1) Preparation of ESCOM personnel for operating at 400 kV	11-Feb-19	21	3	24	32	768
Zambia	Sales Force Effectiveness - Initial managers training (Kazang – Eastern Province: Chipata)	21-Jan-19	3	0	3	6	18
Zambia	Sales Force Effectiveness - Initial agent training (Kazang – Eastern Province: Chipata)	22-Jan-19	16	2	18	6	108
Zambia	Sales Force Effectiveness - Initial agent training (Kazang – Eastern Province: Petauke)	24-Jan-19	4	1	5	3	15
Zambia	Sales Force Effectiveness - Follow-up training (Kazang – Eastern Province: Chipata)	11-Feb-19	7	0	7	3	21
Zambia	Sales Force Effectiveness - Follow-up training (Kazang – Eastern Province: Kateke)	12-Feb-19	7	1	8	3	24
Zambia	Sales Force Effectiveness - Follow-up training (Kazang – Eastern Province: Petauke)	12-Feb-19	6	0	6	7	42
Zambia	Sales Force Effectiveness - Initial managers training (Kazang - Southern Province: Choma)	20-Mar-19	6	0	6	7	42

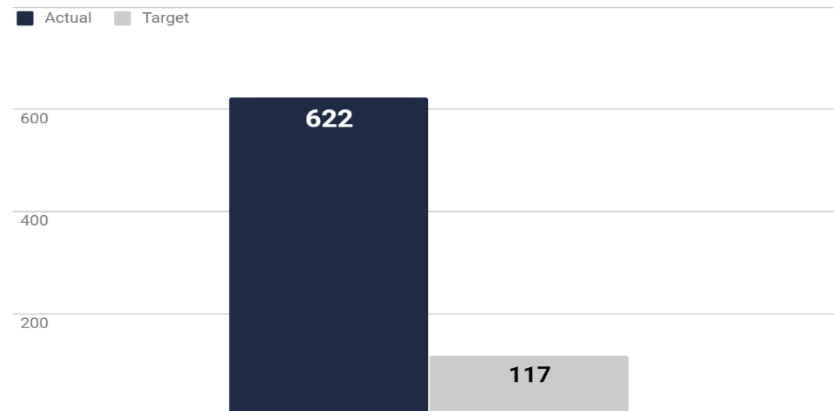
Country	Training & Capacity Building Activity	Date	# of Males	# of Females	Total # of participants	Hours of Training	Person-Hours of Training
Zambia	Sales Force Effectiveness - Initial agent training (Kazang - Southern Province: Namwala)	21-Mar-19	11	0	11	7	77
Zambia	Sales Force Effectiveness - Initial agent training (Kazang - Southern Province: Choma)	22-Mar-16	13	1	14	7	98
Zambia	Sales Force Effectiveness - Initial agent training (Kazang - Southern Province: Mazabuka)	25-Mar-19	10	0	10	7	70
Zambia	Sales Force Effectiveness - Initial agent training (Kazang - Southern Province: Monze)	26-Mar-19	7	1	8	7	56
Zambia	Sales Force Effectiveness - Initial manager training (Vitalite - Eastern Province: Chipata)	19-Nov-18	6	0	6	7	42
Zambia	Sales Force Effectiveness - Initial agent training (Vitalite - Eastern Province: Lundazi)	20-Nov-18	8	2	10	6	60
Zambia	Sales Force Effectiveness - Initial agent training (Vitalite - Eastern Province: Chipata)	21-Nov-18	6	0	6	6	36
Zambia	Sales Force Effectiveness - Initial agent training (Vitalite - Eastern Province: Petauke)	27-Nov-18	11	2	13	6	78
Zambia	Sales Force Effectiveness - Initial agent training (Vitalite - Eastern Province: Katete)	28-Nov-18	11	1	12	6	72
Zambia	Sales Force Effectiveness - Follow-up Training (Vitalite - Eastern Province: Chipata)	25-Jan-19	4	0	4	3	12
Zambia	Sales Force Effectiveness - Follow-up Training (Vitalite - Eastern Province: Petauke)	28-Jan-19	8	3	11	3	33
Zambia	Sales Force Effectiveness - Follow-up Training (Vitalite - Eastern Province: Katete)	29-Jan-19	11	2	13	3	39
Zambia	Sales Force Effectiveness - Follow-up Training (Vitalite - Eastern Province: Lundazi)	30-Jan-19	7	4	11	3	33
Zambia	Sales Force Effectiveness - Initial manager training (Vitalite - Southern Province: Choma)	27-Feb-19	6	0	6	6	36
Zambia	Sales Force Effectiveness - Initial agent training (Vitalite - Southern Province: Choma)	28-Feb-19	17	4	21	6	126
Zambia	Sales Force Effectiveness - Initial agent training (Vitalite - Southern Province: Monze)	1-Mar-19	15	3	18	6	108

Country	Training & Capacity Building Activity	Date	# of Males	# of Females	Total # of participants	Hours of Training	Person-Hours of Training
Zambia	Sales Force Effectiveness - Initial agent training (Vitalite - Southern Province: Mazabuka)	4-Mar-19	17	4	21	6	126
Zambia	Sales Force Effectiveness - Follow-up Training (Vitalite - Southern Province: Mazabuka)	26-Mar-19	13	3	16	3	48
Zambia	Sales Force Effectiveness - Follow-up Training (Vitalite - Southern Province: Monze)	27-Mar-19	14	5	19	3	57
Zambia	Sales Force Effectiveness - Follow-up Training (Vitalite - Southern Province: Choma)	28-Mar-19	13	4	17	3	51
Zambia	Sales Force Effectiveness - Regional Manager Training (Vitalite - Southern Province: Mazabuka)	18-Mar-19	8	2	10	3.5	35
Zambia	Sales Force Effectiveness - Manager Training (Vitalite - Southern Province: Mazabuka)	25-Mar-19	12	2	14	4.5	63
Zambia	Vitalite Lusaka - SSA group 1 training	8-Apr-19	14	2	16	2	32
Malawi	Performance Management & Competency Frameworks Workshop for EGENCO HR	29-May-19	8	2	10	8	80
Malawi	Performance Management & Competency Frameworks Workshop for EGENCO (Non-HR)	30-May-19	28	3	31	8	248
Malawi	Performance Management & Competency Frameworks Workshop for EGENCO (Non-HR)	31-May-19	27	3	30	8	240
Zambia	Vitalite SFE Regional coordinators training	18-Apr-19	8	2	10	3	30
Zambia	Vitalite Lusaka - SFE SSR training group 1	25-Mar-19	12	2	14	4.5	63
Zambia	Vitalite Lusaka - SFE SSR training group 2	1-Apr-19	14	0	14	4.5	63
Zambia	Vitalite Lusaka - SFE SSA group 2 training	16-Apr-19	0	9	9	2	18
Zambia	Kazang SFE Manager training	5-Apr-19	11	1	12	6	72
Zambia	Kazang HQ Sales Support and Call center SFE training	26-Apr-19	7	3	10	6	60

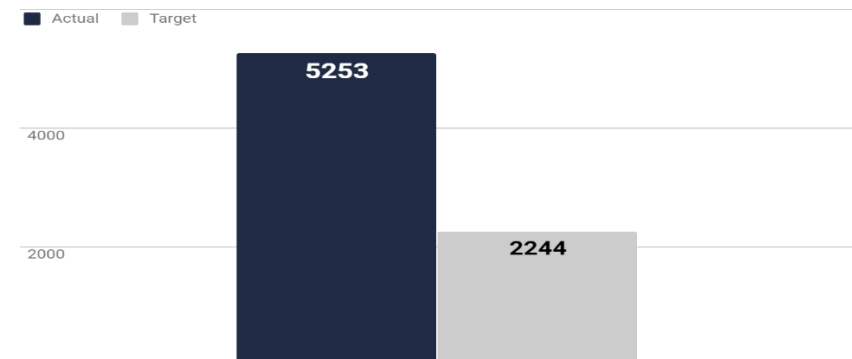
Country	Training & Capacity Building Activity	Date	# of Males	# of Females	Total # of participants	Hours of Training	Person-Hours of Training
Zambia	Kazang SFE Geospatial training	13-May-19	2	1	3	2	6
Zambia	SunnyMoney Lusaka - SFE Manager training	8-May-19	3	2	5	4	20
Malawi	EGENCO Performance Management Capacity Building	29-Jul-19	22	8	30	8	960
Total			520	102	622	290	5253

DASHBOARD FOR YEAR 2 RESULTS OF ALL SAEP ORGANIZED TRAININGS

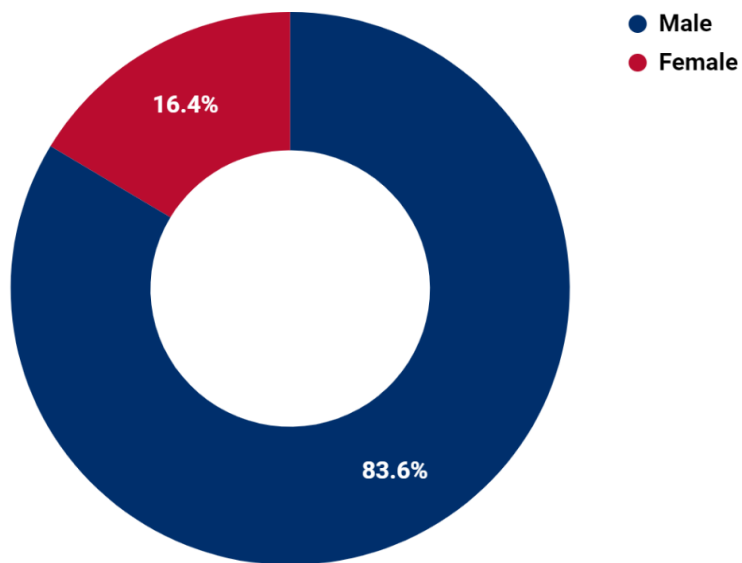
Number of People Receiving Training in Year 2 (Actual vs. Target)



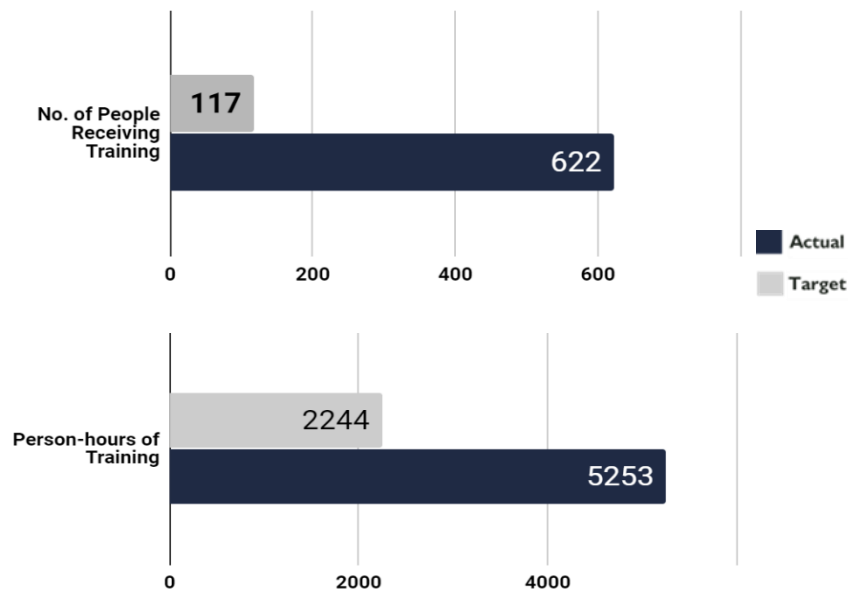
Person-Hours of Training in Year 2 (Actual vs. Target)



Gender Disaggregation of Participants of SAEP's Trainings (Year 2)



Performance for Year 2 Trainings Against the Annual Target



As you can see from the gender disaggregation of the trainings, SAEP needs to continue to make a concerted effort to increase female participation in trainings, especially in utilities and utility organizations including SAPP. The training and capacity building events with utilities were skewed to male participation. The off-grid sales force effectiveness trainings also had some female participation, but as the companies have mentioned, they have a need to continue to increase female recruitment numbers

APPENDIX F ASSUMPTIONS FOR CALCULATION AND INVOICING OF FEE

Pursuant to section B.3 (f) of the SAEP contract, Deloitte is including earned fee on the periodic invoice immediately following the COR's final acceptance of the SAEP Quarterly Progress Report (QPR)¹⁰. Each quarter's earned fees do not exceed one-twentieth (5%) of the total fixed fee amount, or USD \$242,427 per quarter. This includes a maximum of USD \$151,517 for timely submission of all required deliverables during the quarter (Output Indicator #X) and USD \$90,910 for meeting quarterly targets for three Impact Indicators (#Y, #AA, and #AB).

COR acceptance of the QPR will constitute acceptance of the performance indicator values included in the Performance Monitoring and Evaluation Tables presented as an Appendix to that report. With the exception of the first QPR, which covered the period from program award to 30 June 2017, QPRs will follow the US Government's fiscal year.

RECONCILIATION OF DISPARATE PROGRAM CALENDARS

At the request of USAID, Deloitte prepared the SAEP Year 1 Work Plan that covers the period from Program award (15 March 2017) through the end of US Government Fiscal Year (30 September 2018). While this simplifies planning and reporting by aligning Program years to the US Government fiscal calendar, it also has the effect of extending SAEP's Year 1 to just over six fiscal quarters.

From Program Year 2 onward, the calendars for QPR reporting, invoicing of fee, and the Government fiscal year all coincide. This will result in Year 5 being an abbreviated performance year, with just under two quarters for program reporting and invoicing of fee.

TREATMENT OF QUARTERLY AND ANNUAL PERFORMANCE TARGETS

For purposes of billing fee, as per guidance received from USAID/Southern Africa, the LOP targets for fee-based indicators have been divided equally across the Program's 20 quarters. To bill the associated fee for any quarter, Deloitte must meet or exceed the cumulative target for that quarter. Once a quarterly target is met and the QPR reporting the results has been accepted by USAID, Deloitte may then invoice USAID for the associated fee. In the event Deloitte does not meet the annual performance target, fee may not be invoiced in subsequent quarters until that target is met. Conversely, billing fee for targets reached in advance of the quarter in which they are expected to be reached is not allowed.¹¹

Table 2. Cumulative impact targets by quarter for fee-based indicator, Program Year 2

table below summarizes the cumulative impact indicator targets for SAEP's Year 2 by quarter.

¹⁰ As no QPR is produced in the Q4 of any FY, the year's Annual Report takes the place of the Q4 QPR

¹¹ For example, for Indicator #AA (Capacity (MW) from transactions supported by SAEP that achieved financial closure), if SAEP were successful in bringing all 4,000 MW (the LOP target for this indicator) to FC by Q1 of Year 2, Deloitte may not invoice USAID beyond the fee associated for achieving the Q1 Year 2 target, and must wait until Q2 of Year 2 to bill the Q2 fee, Q3 of Year 2 to bill the Q3 fee, and so on.

Table 2. Cumulative impact targets by quarter for fee-based indicator, Program Year 2

Indicator	Disaggregation	FY19 Q1	FY19Q2	FY19Q3	FY19Q4	Total	Baseline & Rationale
#AA: Capacity (MW) from transactions supported by SAEP that achieved financial closure	<ul style="list-style-type: none"> • Country • Technology (separating transmission from generation) • *note when female ownership in developer consortium 	1,400	1,600	1,800	2,000	2,000	0; targets based on transaction pipeline and experience with financial closure timelines and probabilities (includes transmission and generation capacity)
#AB: Direct Electricity Access: Number of new grid and off-grid actual direct connections	<ul style="list-style-type: none"> • Type of connection • Type of enterprise • Country 	1.05 mill	1.2 mill	1.35 mill	1.5 mill	1.5 mill	0; number of new grid connections of off-grid access directly enabled based on OC4 technical work plan with implementation priority countries
#Y: Number of laws, policies, strategies, plans, or regulations, officially proposed, adopted, or implemented	<ul style="list-style-type: none"> • Country • Measure (Clean Energy standard)¹² 	11	13	14	16	16	0; targets set based on anticipated need for relevant laws, policies, strategies, plans or regulations in the region
#X: Submission of required deliverables as per Section F of the Contract	<ul style="list-style-type: none"> • Type and # of reports • Submitted or not submitted timely 	100%	100%	100%	100%	100%	0; For all Section F deliverables not including the trip reports and other reports which will be estimated later
#Z: Generation and Transmission capacity (MW) pending financial closure	<ul style="list-style-type: none"> • Country • Technology/energy source • Transaction Stage • *note female ownership 	1,435	1,640	1,845	2,050	2,050	0; targets set based on transaction list and estimated years to financial closure. The targets for Year 2 are cumulative and not totals for Year 2 alone

RECOVERING FEE IN THE EVENT OF UNDERPERFORMANCE IN A REPORTING PERIOD

Pursuant to B.3 (f) (5) of the SAEP contract (AID-674-C-17-00002), fee amounts unbilled in a given period due to underperformance against targets are not permanently forfeited. With COR approval, these fees may be recovered in subsequent periods when Deloitte returns to meeting or exceeding quarterly or year-to-date performance targets.

¹² Disaggregation: Drafted, Presented, Regional, National, Private Sector Participation, Clean and Cleaner Energy, Small-Scale and Off-Grid Investments, Gender Equity and Country

APPENDIX G STTA MOBILIZED AND TRAVEL TAKEN IN Q4 FY19

Table 3. STTA mobilized during the period of 1 July 2019 to 30 September 2019

Resource	Role / Activity / Scope	Est. Start Date	Est. End Date
Seodi White	Gender and Social Inclusion Consultant. Ms. White, under the guidance of the SAEP Gender Specialist, is carrying out the Gender Equality and Social Inclusion Assessment for ESCOM.	2 July 2019	31 October 2019
Linus Chanda	Zambia Transaction Facilitator. Mr. Chanda supports the KfW Get FiT program in Zambia.	14 August 2019	31 July 2020
Abel Menete	Procurement Specialist. Mr. Menete will support in development the procurement plan for the 400kV transmission line project and the pre-paid metering program in Angola.	23 September 2019	22 September 2020
Caroline James	Human Capital Consultant. Ms. James provide human-centered design (HCD) support for OC2.	16 September 2019	31 October 2019
Monica Barrett	Gender Consultant. Ms. Barrett is performing a data analysis to determine how SAEP can provide gender capacity building support to SADC.	26 August 2019	30 September 2019
Alexandra Eterno	Gender Consultant. Ms. Eterno is performing a data analysis to determine how SAEP can provide gender capacity building support to SADC.	26 August 2019	30 September 2019
Katie Fobben	Senior Consultant. Ms. Fobben is supporting the City of Windhoek electrification work.	28 July 2019	30 September 2019
Neil Borland	Senior Consultant. Supported the City of Windhoek electrification work.	14 July 2019	10 August 2019
Artisha Naidu	Strategy Consultant. Drafted a report on incandescent lightbulb phaseout in Namibia.	1 July 2019	3 August 2019
Stacey Graf	Strategy Consultant. Supported OC4 work in Madagascar.	1 July 2019	3 August 2019
Gus Manke	Cross Cutting Consultant / Designer: Mr. Manke provides cross-cutting support and graphic design enhancements to a variety of SAEP deliverables.	11 July 2019	11 July 2020
Tebogo Mokonyane	Financial Data Capturer. Mr. Mokonyane captures financial data to the Sage Pastel and Accounting System.	14 August 2019	6 November 2019

Table 4. SAEP Team travel between 1 July and 30 September 2019

Dates	Location	SAEP Attendees	Plans / Meetings
3 - June 2019	Mbabane, Eswatini	Maria Mbengashe	To present findings of energy audit and participate in the EWSC Energy Management Stakeholder Workshop
3 – 7 June 2019	Blantyre, Malawi	Vince Micali	The overall objective of the trip was to kick-off the Pilot's Phase 1 and Phase 2 for assessing the operation of the New Performance Management (NPM) process, the capability of the M&E Dept
5 – 7 June 2019	Lusaka, Zambia	Willem Theron, Tshwanelo Rakaibe	The purpose of the meeting was to discuss and understand the details of the OC3 related activities included in the addendum of the signed SAEP/ZESCO Letter of Collaboration (LOC)
5 - 7 June 2019	Luanda, Angola	Izak Du Plessis	The purpose of this trip was to, through a workshop with the Angolan Energy Regulatory Authority (IRSEA) and the invited Angolan Electricity Companies namely PRODEL, RNT and ENDE and Biocom
6 June 2019	Gaborone, Botswana	Olulana Nwosu	To review SADC document and align rules, policies and guidelines as referencing materials for SACREEE rules, procedures and operating guidelines.
17-21 June 2019	Luanda, Angola	Willem Theron, Tshwanelo Rakaibe & Bruno Batista	Held meetings with RNT, AfDB and USAID to advance SAEPs proposed Scope of Work (SOW) for the establishment of the RNT Project Management Office (PMO) [RNT meetings] and to get alignment on support that SAEP and AfDB will be providing to RNT [AfDB meeting]
18 – 20 June 2019	Maputo, Mozambique	Tshegofatso Neeuwfan	To attend the briefing of the presidents of Botswana and Namibia on the Mega Solar concept
18 – 19 June 2019	Gaborone, Botswana	Izak Du Plessis	The purpose of this trip was to, through a workshop with the Botswana Energy Regulatory Authority (BERA) and the invited Botswana Electricity Company namely the Botswana Power Corporation (BPC
19 – 21 June 2019	Lobatse & Gaborone Botswana	David Jankofsky and Ria Govender	To meet with the BERA CEO, Ms Rose Seretse, the management team and staff members to discuss the approach to the

			BERA organizational restructuring exercise that SAEP is assisting BERA with
20 June 2019	Lusaka, Zambia	Olulana Nwosu	To discuss with ZESCO HR Team, high level tasks needed to enable detailed scope of work as per the agreed LOC between SAEP and ZESCO. Focus on OC5 Activities
20-21 June 2019	Windhoek, Namibia	Izak Du Plessis	The purpose of this trip was to, through a workshop with the Namibian Electricity Control Board (ECB) and the invited Namibian Electricity Companies namely NAMPOWER, ERONGO Red, NORED and CENORED
24 – 28 June 2019	Windhoek, Namibia	Tshegofatso Neeuwfan	To engage with stakeholders relevant to the COW Peri-urban Electrification activity
25-27 June 2019	Otse, Botswana	Helga Wenhold and Tru-Handé Kotze	To get insight into and training on USAID/Botswana communication strategies, events planning, events management and, writing styles
30 June – 13 July 2019	Maputo, Mozambique	Jose Cavaretti	Community engagement with EDM and EMU.
1 – 5 July 2019	Lilongwe, Malawi	Sebastian Deschler, Charles Eberly and Henrik Pelser	Task force meetings on the Mpatamanga Hydro power.
3 – 5 July 2019	Maseru, Lesotho	Izak Du Plessis	Presentation of the LEC Strategic Plan to the Board of Directors
3 – 6 July 2019	Mbabane, Eswatini	Jorry Mwenechanya, Ria Govender, Warwick Hayes and Bryan Maytham	Attended the EWSC Energy Management Stakeholder workshop.
10 – 12 July 2019	Blantyre and Lilongwe, Malawi	Tshwanelo Rakaibe and Michael Barry	Held meeting with ESCOM on product optimization.
11 – 12 July 2019	Blantyre and Lilongwe, Malawi	George van der Merwe	Follow-up meeting with ESCOM for preparation of power up, of 400KV system.
15 – 20 July 2019	Blantyre and Lilongwe, Malawi	Brenda Biddulph	SAEP Photographer to capture activities of the program in Malawi.
15 – 19 July 2019	Lilongwe, Malawi	Craig van der Velde, Elizabeth Pfeiffer, Lorna Tucker and Tru-Handé Kotze	Attended the Malawi Kickstarter.

17 – 19 July 2019	Lilongwe, Malawi	Edith Wanjohi	Attended EGENCO Gender Mainstreaming Force and Effectiveness Workshop
21 – 26 July 2019	Luanda, Angola	Willem Theron, Bruno Batista and Tea Mihic	Held meetings with RNT to finalize the scope of work.
22 – 27 July 2019	Manzini, Eswatini	Maria Mbengashe, Jose Bobes and Jorry Mwenechanya	Held meetings with the Ministry of Energy and Efficiency Initiative.
22 July – 02 August 2019	Blantyre, Malawi	Vincenzo Micali	Attended EGENCO Pilot phase 2 training and Outcome 5 training of topic.
23 – 25 July 2019	Maputo, Mozambique	Izak du Plessis	Attended the CNELEC workshop and held meetings with various regulators on the utilization of the standardized KPIs.
24 – 26 July 2019	Blantyre, Malawi	Clarence Olefense	Assisted ENGECO with 41 MW Mbongozi Hydro plant.
25 – 26 July 2019	Maseru, Lesotho	Shilesh Muralidhara	Held meetings with the LEC Board on the NEOI as well as transactional advisory to the Lesotho Government.
29 July – 01 August 2019	Blantyre, Malawi	Olulana Nwosu	EGENCO Training as well as Monitoring and Evaluation.
30 July – 30 August 2019	Luanda, Angola	Joao Ferreira	Support RNT and ENDEI.
31 July 2019 – 02 August 2019	Blantyre, Malawi	Edith Wanjohi	Attended EGENCO Mainstreaming activity.
02 – 02 August 2019	Gaborone, Botswana	David Jankofsky	Held discussions with BERA on reorganization as well as attend the Rooftop Solar final stakeholders meeting.
04 – 07 August 2019	Mbabane, Eswatini	Maria Mbengashe, Ria Govender, Elias Sethosha	Progress discussions with procurement framework development with inclusion of the procurement regulations with MNRE, ESERA and EEC.
05 – 08 August 2019	Maseru, Lesotho	Izak Du Plessis	Review discussions of work conducted by MRC Group on ring-fencing account to mobilize the LEC project for Executives compacts tied to the strategic plan.
07 – 08 August 2019	Lusaka, Zambia	Elizabeth Pfeiffer	Held meetings with KfW and finalized GET Fit embedded advisor.
11 – 16 August 2019	Luanda, Angola	Willem Theron	Held meetings with RNT to advance the PMO.
11 – 22 August 2019	Antanarivo, Madagascar	Tshegofatso Neeuwfan	Activity planning and execution.
12 – 12 August 2019	Gaborone, Botswana	David Jankofsky	Follow-up discussions with BERA on reorganization as well as attend the Rooftop Solar stakeholders meeting.

12 – 21 August 2019	Luanda, Angola	Wayne Mikutowicz, Tea Mihic	Held meetings with EDM and EMU.
15 – 15 August 2019	Gaborone, Botswana	Elizabeth Pfeiffer, Lana Nwosu, Edith Wanjohi	Held meetings on the SOW on Gender Baseline indicators with SADC Secretariat.
18 -24 August 2019	Maputo, Mozambique	David Jankofsky	Engage with SPEED+ Brazilian consultants and to develop a joint roadmap for ARENE on electricity and natural gas.
27 – 27 August 201	Port Louis, Mauritius	Lana Nwosu	To present the E-module at the RERA workshop
27 – 27 August 2019	Harare, Zimbabwe	Mark Sims	Finalize the new access guidelines.
29 – 30 August 2019	Lusaka, Zambia	Willem Theron	To advance ZESCO PMO and SOW.
29 – 31 August 2019	Port Louis, Mauritius	Izak Du Plessis	To present the interim RERA KPI data survey results at the RERA workshop.
02 – 06 September 2019	Luanda, Angola	Tea Mihic, Willem Theron	Meetings with RNT on technical documents gathering.
09 – 12 September 2019	Lilongwe and Blantyre, Malawi	Willem Theron, George van der Merwe	Held meetings with ESCOM on Production Optimization and Maintenance.

APPENDIX H ORGANIZATIONAL CHART & RESOURCES

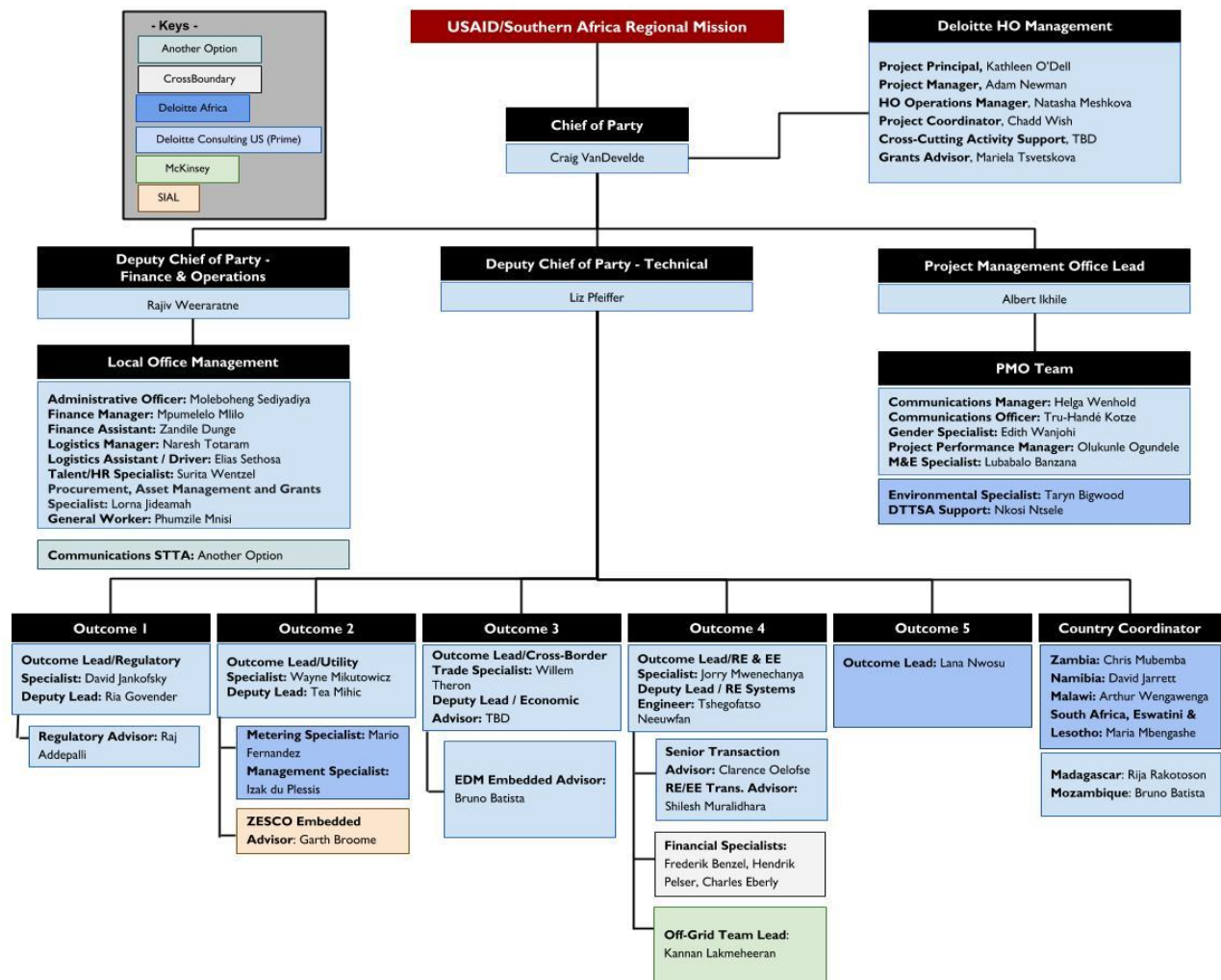


Figure 39. SAEP Organizational Chart as of 30 September 2019

APPENDIX I DETAILED ACTIVITIES PROGRESS

OUTCOME-SPECIFIC ACTIVITIES

Below are the outcome-specific activities from the Year 2 Work Plan. This table is to track the status of the activities and to highlight any activity changes, timing changes or other major items related to activities that SAEP would like to highlight for the period.

Outcome I

Activity Description	SAEP Activity Manager(s)	Start – End Date	Reasoning / Buy-in	Linkages	Deliverable(s)	Status
Intervention 1.01						
ANGOLA						
Develop an updated Roadmap for IRESA Activities Y2.01.01.10.ANG*	David Jankofsky	4/1/2019-6/30/2019	IRSEA request	1.02, 1.04	(1) Development of roadmap for IRSEA (2) Implementation of roadmap to include: review of law, review of IRP role and review of role in procurement	Move to Year 3: Visa for OCI Lead has been secured, but we are awaiting a response from the ISERA Board for travel dates
BOTSWANA						
Review of BERA enabling legislation and restructuring of BERA Y2.01.01.07.BWA	David Jankofsky	4/1/2019-6/15/2019	BERA request		Recommendations and Action Plan to enhance BERA independence	Continue in Year 3: This work continues. OCI Lead visited Gaborone twice in August and continues to make amendments based on input from BERA
Development of tariff filing template for utilities Y2.01.01.08.BWA	Rate case STTA	4/15/2019-5/31/2019	BERA request	OC2, building off tariff filing work in Malawi	Template that can be used by BPC for future tariff application and across the region for other tariff filings	Completed: The BERA rate case has been completed and all templates for future tariff filings have been completed
TOR for IT Platform to manage Licensing Y2.01.01.09.BWA	Ria Govender Rajiv W	4/15/2019-5/31/2019	BERA request		Write TORs for IT licensing platform for BERA to be able to procure technology system	Completed: Final Draft TOR has been shared with BERA; awaiting feedback
Development of a Rooftop Solar Guidelines for the Department of Energy for the Ministry of Mineral Resources, Green Technology and Energy Security Y2.01.01.21.BWA	Ria Govender	5/15/2019-6/30/2019	DOE Botswana request	OC4	Draft guideline for rooftop solar	Completed: Guidelines completed. Counterpart was considering having another workshop with completed Guidelines. That has not yet happened. A "Phase 2" of detailed work at the BERA and BPC levels will follow in FY20Q1. A timeline is being

Activity Description	SAEP Activity Manager(s)	Start – End Date	Reasoning / Buy-in	Linkages	Deliverable(s)	Status
						developed for counterpart currently
Review of the RE Feed in Tariff (REFIT) Policy for Botswana, 2011 for the Department of Energy for the Ministry of Mineral Resources, Green Technology and Energy Security Y2.01.01.22.BWA	Ria Govender	5/15/2019-6/30/2019	DOE Botswana request	OC4	Policy recommendations	Moved to Year 3
Support BERA and BPC in developing the forms and processes to implement the Rooftop Solar Guidelines Y2.01.01.24.BWA	David Jankofsky	3/1/2019-6/30/2019	Request from Botswana Department of Energy	OC4	Implementation of the Roadmap contained in the Guidelines.	Moved to Year 3
ESWATINI						
Capacity building for ESERA staff in processing of utility rate case Y2.01.01.11.SWA	David Jankofsky	10/1/2018-1/2/2019	ESERA request	OC2	One training workshop (duration TBD)	Completed: through on-the-job training in evaluating the EEC rate case
Assistance with evaluating EEC Tariff Change Application Y2.01.01.12.SWA*	Raj Addepalli	11/1/2018-1/31/2019	ESERA request	OC2	Advice and recommendations at the end of the evaluation period	Completed: EEC completed the review, but due to an announcement by the Minister of Finance the rate application has not been finalized
Review of existing legislation of ESERA and EEC Y2.01.01.13.SWA	STTA Ria Govender	4/1/2019-7/31/2019	ESERA request		Recommendations on amendments to the law. Specific focus on independence, procurement. Deliverable must take into account new National Energy Policy and EEC's exclusive right to serve	In progress: MNRE together with ESERA requested SAEP's assistance with a review of the energy sector legislation enacted in 2007. SOW is under review and will be finalized by MNRE
Revision of Tariff Methodology Y2.01.01.18.SWA	David Jankofsky STTA	4/1/2019-7/31/2019	ESERA Request	OC2	Review of new tariff methodology	Completed: This Activity has been completed
Develop ToRs for modeler to determine value of solar for Small Scale Embedded Generation Y2.01.01.19.SWA	David Jankofsky STTA	4/1/2019-5/31/2019	ESERA Request	OC4	TOR for SSEG modeler	Continue in Year 3: This activity has morphed into a Year 3 activity that will cover all cases of self-generation in the region
Review the Connection Charge methodology for ESERA Y2.01.01.20.SWA	David Jankofsky Raj Addepalli	2/5/2019-6/21/2019	ESERA Request	OC2	Written analysis and recommendations for ESERA	Completed: ESERA Board accepted some of SAEP's recommendations
MALAWI						
Support to MERA in staff capacity building in (1) Off-grid systems (Solar Home	David Jankofsky Ria Govender	7/1/2019-9/30/2019	SAEP	OC5	(1) Support MERA in development of capacity building plan	Moved to Year 3: MERA indicated in August that it would still like this Activity in Y3. OC1

Activity Description	SAEP Activity Manager(s)	Start – End Date	Reasoning / Buy-in	Linkages	Deliverable(s)	Status
Systems and mini-grids) (2) EE and Demand Side Management, (3) How best to evaluate Independent Power Producers (IPPs) and Power Purchase Agreements (PPAs) Y2.01.01.04.MWI					(2) Training materials from the capacity building topics	Lead indicated that he required a letter from CEO articulating subject matter(s) for Capacity Building
NAMIBIA						
Development of tariff methodology for electricity produced micro-off-grid Y2.01.01.16.NAM	Tariff Specialist David Jankofsky	8/1/2018- 5/31/2019		OC4.06	Recommended methodology and (possibly) tariff structure for off-grid sources of electricity	Continue in Year 3: Being vetted by ECB manager of Regulatory Economics
Support ECB with battery storage regulation Y2.01.01.17.NAM	David Jankofsky STTA	4/1/2019- 6/15/2019	ECB Request	OC4	Report identifying battery storage applications and services, and recommendations on whether rulemaking is necessary. This activity for Namibia will guide future regional application	Continue in Year 3: Draft paper currently being edited for discussions with ECB and for regional application
REGIONAL						
Provide technical input to RERA for its annual conference Y2.01.01.14.REG	David Jankofsky	9/1/2018- 11/30/2018	RERA Request		(1) Confirmation from RERA on: MERA POC, support will focus on content / technical topics for agenda, and SAEP will not provide logistical or financial support (2) Support to and input to conference agenda. David Jankofsky to provide moderator support to first day event with CEOs	Completed
Evaluation of Applications for Tariff Changes Y2.01.01.23.REG	David Jankofsky	7/1/2019- 9/30/2019			Paper Making Recommendations for Regulatory Authorities regarding the processing of applications for changes in tariff	Continue in Year 3
ZAMBIA						
Assistance to ERB in Evaluation of ZESCO Rate Case and communication of results to public Y2.01.01.01.ZMB	Tariff Expert	5/1/2019- 9/30/2019	ERB request	OC2.04 ZESCO COSS being completed	(1) Formal training in tariff reviews (2) Technical assistance in production of guidelines for utilities for tariff applications as needed	Moved to Year 3: ZESCO did not file in Year 2. We will support the ERB on this whenever ZESCO files a change for application in rates. It is unknown when this will be.

Activity Description	SAEP Activity Manager(s)	Start – End Date	Reasoning / Buy-in	Linkages	Deliverable(s)	Status
Intervention 1.03						
MALAWI						
Review connection agreements for IPPs (Year 1) Y2.01.03.03.MWI*	Willem Theron STTA	7/1/2019- 9/30/2019	MERA request	OCI.01	(1) Report and recommendations: (2) Possible development of standard Agreement. Will include analysis on whether different connection agreements are required for utility scale renewable developments.	Deleted
Develop “light handed regulation” connection agreement for rooftop solar (Year 1)* Y2.01.03.04.MWI	David Jankofsky STTA	7/1/2019- 9/30/2019	MERA request	OCI.01	(1) Interconnection Agreement template. (2) If applicable, the team could look at embedded generation more broadly in this activity.	Deleted
Intervention 1.04						
BOTSWANA						
BPC 100 MW solar tender RFP design Y2.01.04.13.BWA	Christine Covington, Procurement Expert	10/1/2018- 9/30/2019	Continuation Year 1	1.04	RFP documents Briefing documents on status of the procurement	Continue in Year 3
ESWATINI						
Continue assistance to MNRE and the Procurement Committee, including ESERA in executing procurement activities aligned with the Procurement Toolkit Y2.01.04.02.SWA	Ria Govender	10/1/2018- 9/30/2019	ESERA /MNRE request		(1) Operationalize Procurement Toolkit (2) Work through first procurement with Procurement Committee	Continue in Year 3: Draft Procurement regulations have been shared with Ministry in Eswatini. Ministry was due to comment October 18. No comments received. OCI will follow up to determine if any final changes desired by Ministry at earliest possible convenience
Support ESERA in the Development of a Net Metering (Embedded Generation) Policy Y2.01.04.05.SWA	David Jankofsky	5/1/2019- 7/1/2019	ESERA request			Completed: Completed in Year 1. Follow-on activities related to this are covered in SSEG activity listed above
SOUTH AFRICA						
Continue to provide support to the IPP Office’s REIPPP Round 5 program Y2.01.04.04.RSA*	Ria Govender	8/15/2018- 9/30/2019	IPP Office request		Deliverables per the SOW outlined including support to develop RFP documents	On hold: RSA has finalized/gazetted its IRP. Activity still on hold, but perhaps the IRP activity will make it such that matters begin to move

Activity Description	SAEP Activity Manager(s)	Start – End Date	Reasoning / Buy-in	Linkages	Deliverable(s)	Status
ZAMBIA						
Assist in the evaluation of a “one-stop-shop” to assist potential IPP developers in bringing their projects to fruition (Year I) Y2.01.04.01.ZMB*	Ria Govender	3/15/2019-9/30/2019	Ministry of Energy	OC4.01, EU Program would like to take this on	(1) Discussion with Ministry of Energy for buy-in to determine where the one-stop shop will be housed and its duties (within OPPPI or external) (2) Action Plan to establish “One-Stop-Shop” (3) Action Plan for a supporting website (4) Formal training plan for staff	Continue in Year 3: IAERP’s Project Lead signed the LOC between SAEP and the EU for the proposed One-Stop-Shop on 15 May 2019. SOW was drafted and shared with the EU for comments. IAERP’s Project Lead is comfortable with the SOW and will use it as a basis to develop a TOR for the consultant that the EU. Work has commenced on SAEP’s key deliverable for this Activity

Intervention 1.05

MOZAMBIQUE						
Assistance in developing gas and oil regulatory capacity at ARENE Y2.01.05.02.MOZ	David Jankofsky	1/1/2019-3/31/2019	ARENE request		Roadmap for ARENE	Continue in Year 3: OCI Lead has traveled to MOZ and developed draft Roadmap for ARENE review. Comments not yet received from ARENE. Possibly activity has slowed in Mozambique due to impending elections

REGIONAL

Assist SADC with updates and reviews of TOR for Regional Gas Masterplan (Year I) Y2.01.05.01.REG	Willem Theron	8/1/2018-3/31/2019	SADC Request		Comments on TOR for SADC Regional Gas Masterplan	Completed. DBSA should be releasing a tender for this work to be completed shortly
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Outcome 2

Activity Description	SAEP Activity Manager(s)	Start – End Date	Reasoning / Buy-in	Linkages	Deliverable(s)	Status
Intervention 2.02						
ZAMBIA						
Work with ZESCO and developers to implement PPAs,	Charles Liebenberg Garth Broome	Ongoing	ZESCO LOC	OC4	Targeted assistance with specific PPAs. Assistance will be targeted and when requested	Completed

Activity Description	SAEP Activity Manager(s)	Start – End Date	Reasoning / Buy-in	Linkages	Deliverable(s)	Status
implementation agreements and licenses Y2.02.02.02.ZMB					by ZESCO. It will not be an embedded advisor role.	
LESOTHO						
Work with LEC to manage consultants to ring-fence Gx, Tx, Dx and Sx so as to comply with LEWA requirements Y2.02.02.08.LSO	Izak du Plessis	4/5/2019-10/31/2019	Request by LEC to continue; as consultants have been appointed in March	OC1	(1) Review work plan and deliverables of the ring-fencing consultants (2) Ensure compliance with LEWA requirements (3) Attend review meetings (4) Close-out report	Continue in Year 3: Advising consultants as they provide recommendations on ring-fencing to meet regulatory requirement. SAEP provided review on draft report
Intervention 2.03						
MALAWI						
Support to EGENCO to operationalize its Strategic Plan Y2.02.03.07.MWI	Vince Micali	5/1/2018-8/31/2019	Requested by EGENCO	OC5	Process, organization and tools to implement M&E process	Completed: A follow-up work proceeded, Phase 2 and continued into Y3
Support EGENCO to develop gender mainstreaming program Y2.02.03.08.MWI	Gender Advisor	10/1/2018- TBD	SAEP proposal	OC5	Support and implementation documents for new Gender Specialist within EGENCO	Continue in Year 3: This will be continued under gender activity number
Support women development on utility boards by providing training on recruiting, promoting and retaining women in utility leadership Y2.02.03.14.MWI	Gender Advisor	Moved to Q4	EGENCO	OC5	Training material, will be coordination with the Board/ Executive Workshops	In progress: Work is still in progress and will be finalized by end of November 2019. Completed: 1) conducted the gender self-assessment, 2) in process of consolidating the outcome of the findings
ZAMBIA						
Live training on nodal forecasting tool in preparation of IFC scaling solar projects coming online Y2.02.03.01.ZMB	Garth Broome	2/1/2019-2/28/2019	Leading practice-requested by ZESCO	OC5	Training module for ZESCO	Completed. As additional assistance is required Garth provides light touch support as the IFC scaling solar projects come online
Support women development on utility boards by providing training on recruiting, promoting and retaining women in utility leadership roles (Year 1)* Y2.02.03.05.ZMB	Gender Advisor	Starts when we can get access to the board	In ZESCO LOC	OC5	Training material, will be would coordinate coordination with the Board/ Executive Workshops	Deleted
Develop charges (Grid service, market service, transmission	Garth Broome	5/1/2019-11/29/2019	ZESCO LOC		Report w/ recommendations (started in Year 1, but should only go into beginning of Year 2)	Moved to Year 3: Due to ZESCO delays

Activity Description	SAEP Activity Manager(s)	Start – End Date	Reasoning / Buy-in	Linkages	Deliverable(s)	Status
service, ancillary services) and the payment mechanisms Y2.02.03.09.ZMB						
Develop template project finance models for generation (hydro, solar, wind, coal, HFO) and transmission projects for ZESCO to use for project validation Y2.02.03.10.ZMB	Wayne Mikutowicz	3/1/2019-9/30/2019	ZESCO LOC	OC4	Generic project finance models for the generation types listed Training on project finance to enable ZESCO to interrogate project finance models	Moved to Year 3: Due to ZESCO delays
Transmission pricing: development of charges (Grid service, market service, transmission service, ancillary services) and the payment mechanisms Y2.02.03.11.ZMB	Wayne Mikutowicz	21/1/2018-6/30/2019	ZESCO LOC	OC4	Methodology for the development of various charges to apply in the electricity market SAEP will provide a specific financial model and a report describing the methodology	Moved to Year 3: Due to ZESCO delays
Review the existing tools for M&E with a view to develop and/or improve the framework for Corporate Projects department and recommend ideas on project performance tracking software to track enterprise wide corporate projects Y2.02.03.12.ZMB	Wayne Mikutowicz	3/1/2019-9/30/2019	ZESCO LOC	OC2, OC4	Report containing recommendations for improvement of the ZESCO M&E system process flow, M&E organizational structure, M&E tracking tools, and staff skills development Business case and software review document for the M&E tool	Moved to Year 3: Due to ZESCO delays
Develop recommendations for the establishment of a Central Planning Unit Y2.02.03.13.ZMB	Wayne Mikutowicz	4/1/2019-9/30/2019	ZESCO LOC	OC3, OC4	Report containing recommendations for the establishment of the Central Planning Unit	On hold: Awaiting the decision by Government of Zambia on Public Sector Reform Plan

Intervention 2.07

REGIONAL

Assistance to RERA in the development of comprehensive set of Regional KPIs Y2.02.07.01.REG	Izak Du Plessis	11/1/2018-11/30/2018	Assistance requested by RERA	OC1	(1) Presentation of results to RERA annual convention (2) Final report	Completed: A follow-up work proceeded, Phase 2 and continued into Y3
RERA development of regional KPIs: Ensuring Sustainability Y2.02.07.02.REG	Wayne Mikutowicz	2/18/2019-11/20/2019	RERA request	OC1	(1) Inception Report (2) Consolidated report on outcome of meetings with national regulators and participating utilities (3) Briefing report on the results from the new data collection process (4) Report on the outcome of workshop with national regulators	Continue in Year 3: This is an ongoing activity. Preliminary report has been issued. The activity will continue in Y3

Activity Description	SAEP Activity Manager(s)	Start – End Date	Reasoning / Buy-in	Linkages	Deliverable(s)	Status
					(5) Report on the results achieved from discussions with national regulators and participating utilities and data submission process (6) Briefing report on results presentation to national regulators at annual RERA regional conference (7) Final report on RERA member plans for achievement of sustainability process and updated KPIs	
Intervention 2.09						
ANGOLA						
Conduct Angola connection assessment Y2.02.09.04.ANG*	Jose Cavaretti	3/15/2019-6/15/2019	SAEP proposal	OCI-4	Assessment Report and Work Scope (Discovery mission)	Continue in Year 3
AfDB Metering ENDE Y2.02.09.06.ANG	Wayne Mikutowicz	8/1/2019-9/30/2019	Requested by ENDE		Phase I (Assistance to AfDB on pre-paid metering program): Deliverables: (1) Approved LOC (2) Gap assessment (report with recommendations) (3) Metering Development Specification and Procurement Plan (4) MDM Plan (5) Commercial Operation systems (6) Progress reports (7) Final report	Moved to Year 3
MOZAMBIQUE						
Design and implement EMU for EDM connection assistance Y2.02.09.01.MOZ*	Deloitte Mozambique Jose Cavaretti	8/1/2018-9/30/2019	EDM request	OC4	PMO set up, procedures, manuals PMO Toolkit developed	Continue in Year 3

Outcome 3

	SAEP Activity Manager(s)	Start – End Date	Reasoning / Buy-in	Linkages	Deliverable(s)	Status
Intervention 3.01						
REGIONAL						
Review SADC's Protocol on Energy Y2.03.01.05.REG	Tshwanelo Rakaibe Neil Borland	8/1/2018- 8/31/2020			Updated Protocol	Completed: Allowed some LOE in Y3 if assistance is required
SOUTH AFRICA						
Assist the National Energy Regulator (NERSA) to develop cross border trade rules for IPPs Y2.03.01.03.RSA	Ria Govender	8/1/2019- 9/30/2020	Important for market development	OCI	Cross-border rules for IPPs	Continue in Year 3: Still await feedback from NERSA on LOC before we can begin work
Intervention 3.02						
REGIONAL						
Develop system optimization and trading simulation models Y2.03.02.01.REG	Willem Theron Energy Planning Specialist	10/1/2019- 5/29/2020	Building on utility specific production optimization in Malawi	OCI.03, Grant program	System simulation model	Moved to Year 3: OC3 will engage SAPP when the ESCOM production optimization activity is concluded in August 2019
Intervention 3.04						
REGIONAL						
Assist SAPP and RERA to develop a guideline for access of new generators to the SAPP interconnected system Y2.03.04.01.REG	Mark Sims	3/1/2019- 12/31/2019	Included in SAPP LOC	OC5	(1) Access guideline and training report (2) Advancement of new generation capacity, especially from the private sector	Completed: Completed on 27 August when it was submitted to SAPP. Allowed for some LOE in Y3 to assist with roll out and marketing
Provide Capacity Building workshop to SAPP for QOS Y2.03.04.02.REG	Chris Mubemba	9/3/2018- 10/31/2018	Included in SAPP LOC		(1) Training material (2) Training report	Completed
Provide Capacity Building workshop to SAPP for RE technologies and operational challenges Y2.03.04.03.REG	David Jarrett	9/1/2018- 10/31/2018	Included in SAPP LOC		(1) Training material (2) Training report	Completed
Intervention 3.05						

SAEP Activity Manager(s)	Start – End Date	Reasoning / Buy-in	Linkages	Deliverable(s)	Status
ANGOLA					
Support RNT to establish a PMO to advance the Central – South Transmission Project Y2.03.05.16.ANG	Willem Theron	7/1/2019-9/30/2019	AfDB Request and RNT endorsed	OC3 Owners Engineer procured. RNT PMO established and operationalization	Continue in Year 3: LOC concluded with RNT. Delivery commenced and will continue through Y3
MALAWI					
Support capacity-building for production optimization in Malawi Y2.03.05.02.MWI*	Michael Barry	10/1/2018-8/30/2019	Initial discussions with Malawi indicate a willingness to cooperate	Tied to Year 1 tool that was developed System optimization training (tool was developed in Year 1)	Completed: Summary report done and final scheduled for end of October 2019
Advisor to assist ESCOM to prepare to operate in an interconnected system and at 400kV. The following task will be done in Y2: (1) Preparation of ESCOM personnel for operating and maintaining a 400kV transmission system. (2) Preparation of ESCOM personnel for operating in an interconnected system. Y2.03.05.05.MWI	Johnny Uys, Mzivanda Mbuseli	2/1/2018-10/31/2019	This need had been identified by OC3 Lead, requested by ESCOM and supported by MCC to ensure sustainability of their 400kV project	(1) Advisor reports (2) New interconnector capacity	Completed
MOZAMBIQUE					
Embedded Project Coordinator in EDM to manage the Temane Transmission Project and its interface to the Temane 400 MW IPP project Y2.03.05.04.MOZ	Bruno Batista	1/8/2018-9/30/2019	This activity had been requested by EDM and the SAEP involvement is supported by SPEED+	OC3, OC1.05 (1) 400 MWs of generation and opportunities of providing access to new consumers on route to Maputo (2) Progress will be reported through quarterly reports	Completed: All financing in place and OE appointed. A detailed report is under development for the Y2, which will be submitted for review as soon as completed
REGIONAL					
Analysis on the status of interconnectors as they progress towards financial close Y2.03.05.03.REG	Tshwanelo Rakaibe	10/1/2018-9/30/2019	A general concern exists that most of the new transmission	Quarterly interconnector report	Completed: On going activity, part of the Quarterly report

	SAEP Activity Manager(s)	Start – End Date	Reasoning / Buy-in	Linkages	Deliverable(s)	Status
			interconnectors will not reach FC			
Provide commercial program and portfolio management coordination support on the Zambia–Tanzania–Kenya (ZTK) Interconnector projects Y2.03.05.06.REG	Willem Theron	7/1/2019-9/30/2020	Initial discussions with target entities indicates a willingness to cooperate		SAEP will provide the program management role and assist with the commercial studies (PPA and/or wheeling agreements)	Moved to Year 3: Delayed awaiting feedback from the SAPP. The World Bank asked for SAEP to support SAPP, but we are waiting on feedback from SAPP
Provide support to SAPP in organizing study tours Y2.03.05.08.REG	Jane Obbagy Carol Mulholland	7/1/2018-11/30/2018		Request from SAPP	Training reports for both study tours	Completed: SAEP supported SAPP with organizing study tours to the U.S. for the SAPP OSC and ESC in October and November 2018 respectively
Provide support to SAPP in organizing study tours in Year 2 Y2.03.05.09.REG	Carol Mulholland, Tshwanelo	4/1/2019-10/31/2019		Request from SAPP	Training reports for study tour	Continue in Year 3: All arrangements in place. Will prepare a status report at the end of Y2
Support to SADC on holding their ETG meetings and hosting SAEP Advisory Committee Meetings Y2.03.05.10.REG	Willem Theron	4/1/2018-9/30/2019	USAID request	Cross-cutting	(1) SAEP presentations (2) Advisory Committee presentations	Completed
ZAMBIA						
Load forecasting software analysis and business case recommendations Y2.03.05.11.ZMB	Willem Theron	7/26/2019-9/30/2019	ZESCO LOC		Report with recommendations on standard software tools for long-term forecasting	Moved to Year 3
Management of ZESCO interconnector portfolio with focus on ZTK transaction advisory Y2.03.05.13.ZMB	Willem Theron	4/1/2019-9/30/2019	ZESCO LOC		(1) Develop framework to review the commercial viability of ZTK which can then be applied by ZESCO to other interconnectors (2) Project management deliverables and systems developed with ZESCO to move ZTK forward that can then be used to manage all the interconnectors	Not yet started: Following meeting between SAEP and ZESCO on 6 June 2019 it was agreed that SAEP will develop Scope of Work (SOW), and share with ZESCO for comments and inputs
Review of ZESCO energy trading methodology, process, and evaluation tools for exploring opportunities and risks to the business and optimizing benefits Y2.03.05.14.ZMB	Willem Theron	9/2/2019-9/30/2020	ZESCO LOC		(1) Develop framework and process flow for identification and utilization of energy trading opportunities internally and in the region (2) Ideas/strategies for ZESCO maximization of revenues from trading opportunities	Moved to Year 3

	SAEP Activity Manager(s)	Start – End Date	Reasoning / Buy-in	Linkages	Deliverable(s)	Status
Review potential private sector investment options in transmission Y2.03.05.15.ZMB	Willem Theron	4/1/2019-9/30/2019	ZESCO LOC		Financing models for transmission projects	Continue in Year 3: The detailed SOW is being developed and should be submitted by end of October 2019

Intervention 3.06

REGIONAL

Ongoing assistance and advice to SAPP as they work with procured advisors to develop the regional transmission infrastructure funding facility (RTIFF) Y2.03.06.01.REG	Willem Theron International Finance Structuring Expert	3/18/2019-5/29/2020	SAPP will use a procurement process to procure a consultant that will advance and establish the fund/ SAPP. SAPP will use SAEP as an advisor to this process	OC3.05, 4.01	Quarterly Reports	Continue in Year 3: The SAPP consultant Inception report was influenced by SAEP which led to a re-engagement with the consultant to clarify the deliverables. SAEP will continue to advise the SAPP in Y3 and the SOW may be expanded
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Outcome 4

Activity Description	SAEP Activity Manager(s)	Start – End Date	Reasoning / Buy-in	Linkages	Deliverable(s)	Status
Intervention 4.01						

MALAWI

Illovo sugar off-grid project Y2.04.01.02.MWI	Jorry Mwenechanya	10/1/2018-9/30/2019	USAID request		(1) Transaction advisory services. Specific deliverables will need to be scoped. (2) Procurement and / or financing support. (3) Illovo asked USTDA for feasibility study	In progress: NDA concluded and preliminary information-sharing initiated to clarify Illovo's request for assistance and the specifications of the plant they are establishing. The activity is being executed by SAEP's transaction team and will carry on into Year 3
AGRICANE micro-grids technical assistance Y2.04.01.04.MWI	Arthur Wengawenga	6/3/2019 – 9/30/2019	USAID request		TA will be provided. Specific deliverables are yet to be determined	In progress: Activity is still in the scope confirmation and data-gathering phase. A scope of work has been developed and most of the data that the team requires

Activity Description	SAEP Activity Manager(s)	Start – End Date	Reasoning / Buy-in	Linkages	Deliverable(s)	Status
						has been received from the counterpart
REGIONAL						
TA and TTS to IPPs and off-grid businesses achieved through the exercise of five mechanisms / “pathways to MWs and connections” Y2.04.01.01.REG	Lead Transaction Advisor Cross Boundary team	Ongoing	MW Connections		(1) Summary report on all transactions that received TA or TTS during the reporting period (2) As applicable, at the completion of delivery of both TA and TTS, develop anonymized “case studies” highlighting method and result of the team’s services, for delivery to SAEP, USAID, and Power Africa stakeholder community, where appropriate. (In Malawi will continue support on solar projects, Phanes and the below off-grid projects)	Completed: Individual transactions are reported separately
ZAMBIA						
Support to KfW and the Zambia GET FiT Secretariat on closing six 20 MW solar PV IPP projects Y2.04.01.05.ZMB	Clarence Oelofse	6/19/2019-9/30/2019	KfW request	OCI	Information package to aid project developers in Zambia	In progress: Linus Chanda has been appointed as the transaction facilitator. At the end of Year 2, he was discussing preparatory tasks that need to be completed prior to the GET FiT Support ramping up. It is anticipated that there will be some activity related to the activity in Q1 of year 3
Intervention 4.03						
REGIONAL: BOTSWANA AND NAMIBIA						
Mega-Solar Southern Africa Vision Y2.04.03.06.REG	Adam Newman	11/15/2018 – 9/30/2019	Power Africa request		Case studies draft Draft SOW for pre-feasibility study Presentation for Power Africa Summit Presentations for Botswana and Namibia stakeholder engagement Brief stakeholder engagement plan	Completed. Stakeholder engagements with the governments of Botswana and Namibia were carried out in this quarter. The PA coordinator also presented the concept to the HoS of Namibia and ministers from Botswana and Namibia
MALAWI						
vRE integration for JCM project support to ESCOM Y2.04.03.05.MWI	System Operations Specialist	8/1/2019 - 1/30/2020	ESCOM request	OC3	Inception Report Training Plan and Training Material	In progress: The vRE expert had inception meetings with ESCOM in Malawi in September 2019. At

Activity Description	SAEP Activity Manager(s)	Start – End Date	Reasoning / Buy-in	Linkages	Deliverable(s)	Status
					Profiles of ESCOM Resources to be capacitated	the end of Year 2, OC4 was finalizing the inception report for the activity and preparing for a second trip that will focus on network studies for grid integration of PV assets

NAMIBIA

Provide technical support to CENORED for battery storage implementation Y2.04.03.04.NAM	Adam Newman	3/31/2019-7/30/2019	CENORED request, follow-on activity	OCI	(1) Procurement Roadmap (2) RFP documents	In progress: Draft final report has been completed. At the end of Year 2 the report was going through an internal review process. The report will be submitted to CENORED in October 2019. CENORED will then submit it to their board with the aim of obtaining approval to proceed with further activities related to battery storage procurement
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Intervention 4.05

ESWATINI

Support EWSC with an EE program Y2.04.05.08.SWA	Jorry Mwenechanya EE/DSM Specialist	6/3/2019-8/30/2019	EWSC Request		Energy audit report and EE implementation plan	In progress: Draft final report was submitted to SAEP by the contracted consultant in September 2019. It is currently going through internal reviews and will be submitted to EWSC in October 2019
Ministry EE Policy Implementation Y2.04.05.09.SWA	EE Specialist	7/15/2019-10/31/2019	Ministry request	OCI	Inception Report. Implementation Plan	In progress: Activity was initiated in Q3 of Year 2 and SAEP has already received and accepted an inception report from the consultant. The activity is due to be finalized in Q1 of Year 3
Review draft regulations on phasing out incandescent lamps Y2.04.05.10.SWA	Tshegofatso Neeuwfan	7/10/2019-7/26/2019	Ministry Request	OCI	Comments on the draft regulations	On hold: No activity in Q4 of Year 2. The Ministry in Eswatini have not provided a clear picture of what they need assistance with and have not provided any documentation to SAEP to review

Activity Description	SAEP Activity Manager(s)	Start – End Date	Reasoning / Buy-in	Linkages	Deliverable(s)	Status
MALAWI						
Assess potential of DSM and EE in Malawi's power sector Y2.04.05.02.MWI	Jorry Mwenechanya EE/DSM Specialist: Izaiah Mulenga	4/20/2018- 6/28/2019	Continues work of the MCC	OCI for net metering regulation	Report outlining estimated MW savings from DSM/EE opportunities and recommendations for implementing such programs	Completed: A final report was developed and sent to ESCOM for comments
NAMIBIA						
Develop recommendations to improve the DSM program and develop model regulations for utility-based DSM, working with MME and NEI (Year 1) Y2.04.05.03.NAM	David Jarrett Tshegofatso Neeuwfan	3/1/2019- 7/31/2019	MME/NEI Request	OC2	(1) DSM model regulations produced (2) LOC with MME	Completed: SAEP has agreed to the MME and NEI's request to include a follow-on activity in the Year 3 Work Plan. This activity will entail the review of the work product of the consultant that the MME and NEI will recruit to help them draft an EE/DSM policy statement
Impact study on the phase out of incandescent light bulbs Y2.04.05.07.NAM	David Jarrett	11/13/2018- 7/31/2019	Ministry request	OCI	Report detailing the impact of phasing out incandescent bulbs	In progress: Activity draft report going through internal reviews prior to being submitted to the MME. The activity will be completed in Q1 of Year 3
Intervention 4.06						
ESWATINI						
Establishment of Rural Access Fund Guidelines to complement draft regulations Y2.04.06.26.SWA	Jorry Mwenechanya	8/30/2019- 11/29/2019	Ministry Request	OCI	Rural Access Fund Guidelines	Moved to Year 3
MADAGASCAR						
Conduct a technical assessment of the feasibility of tender process support with ADER Y2.04.06.10.MDG	Rija Rakotoson Jorry Mwenechanya	Moved to Year 3	Requested by ADER in the LOC signed on February 21, 2018		(1) Inception report and work plan the entire duration of the assignment. (2) Sector diagnostic	Moved to Year 3: ADER does not have the funds for AP3
Capacity building to ADER in tender process and technical evaluation of mini-grid projects Y2.04.06.11.MDG	STTA (French-speaking)	On Hold	Requested by ADER in the LOC signed on February 21, 2018		Training report and training materials	Moved to Year 3. ADER does not have the funds for AP3

Activity Description	SAEP Activity Manager(s)	Start – End Date	Reasoning / Buy-in	Linkages	Deliverable(s)	Status
Capacity building for local mini-grid developers in project development process through the AOPEM association Y2.04.06.12.MDG	Rija Rakotoson, Jorry Mwenechanya		Requested by local operators		(1) Training report and training materials. (2) This will include and build on support to EOSOL	On hold
Implementing solar off-grid design with engineering and social sciences colleges Y2.04.06.15.MDG	Rija Rakotoson Jorry Mwenechanya	6/3/2019-9/30/2019	Leading practice SAEP	OC5	(1) Inception report. (2) Report detailing work plan until the end of the program	In progress: Activity extending into Q1 of Year 3 due to changing work schedule on one of the sites that the school of engineering is supposed to visit. At the end of Year 2, the Country Manager was in constant contact with the developer to agree to a new trip date
Assistance to the Ministry to catalyze the development of clean and affordable self-generation options for businesses in Madagascar (businesses that can't meet their demand with ADER JIRAMA only) Y2.04.06.27.MDG	STTA (French speaking)	7/3/2019-9/30/2019	Requested by the Ministry of Energy	OC2	A report with options for the development of new generation capacity	On hold
Assistance to the Ministry to catalyse the development of clean and affordable self-generation options for Health-Care facilities in Madagascar (facilities that can't meet their demand with ADER JIRAMA only) Y2.04.06.28.MDG	STTA (French speaking)	7/3/2019 - 9/30/2019	Requested by the Ministry of Energy	OC2	A report with options for the development of new generation capacity	On hold
Provide assistance to the technical studies and transaction advisory for the rehabilitation of abandoned diesel-based concessions Y2.04.06.24.MDG	Rija Rakotoson	7/12/2018-6/28/2019	ADER request	OC1.04OC4.08	Report detailing elements of roll out program and implications	Completed: Reports developed and translated. Recommendations will be discussed with ADER during an SAEP trip in July 2019
SAVA region off-grid electrification Y2.04.06.25.MDG	Rija Rakotoson	7/12/2018-6/28/2019	SAEP Concept	OC4.01	Report detailing various business models with advantages and disadvantages for electrification	Completed: Report developed. SAEP will share the report with SHS companies operating in the SAVA region

Activity Description	SAEP Activity Manager(s)	Start – End Date	Reasoning / Buy-in	Linkages	Deliverable(s)	Status
					More detailed deliverables will be outlined in the SOW	
MALAWI						
Transaction advisory services to GOM on Mpatamanga project Y2.04.06.06.MWI	Transaction Advisor Sebastian Deschler (CrossBoundary)	8/17/2018-12/31/2020	EGENCO request; IFC request	OCI.04	(1) Joint Development Agreement Signed with IFC and project co-developer (2) Mpatamanga phase one development complete and project is ready for tender design and launch	In progress: SAEP continues to provide support to the Government of Malawi. Support entails navigating the development of project agreements
The implementation of SHS Kick-Starter. Task 1: Finalize program design, incentives and financing. Task 2: Set up program and select participants. Task 3: Support SHS players in program implementation Y2.04.06.07.MWI	McKinsey	10/1/2018-9/30/2019	Leading practice		Bi-monthly word-report giving a summary overview of the progress of the preparation/ implementation of the Kick-Starter and the activities performed during the report period, with an appendix of the key documents used in these activities	In progress: Four companies were shortlisted after a rigorous process of applications and interviews. the team in Malawi had finalized the operational support that would be provided to each of the companies
Madonna foundation solar installation review Y2.04.06.09.MWI	Arthur Wengawenga David Jarrett	2/1/2019-9/16/2019	USAID request and SSIR request from Mercy James		TBD after conversations with Foundation based on technical specification needs	In progress: Activity extending beyond initial duration due to changing counterpart requirements as well as counterpart actions that change the scope of SAEP's participation. SAEP currently working with the counterpart to finalize their requirements for support
NAMIBIA						
Electrification of peri-urban area of Windhoek (Year 1) Y2.04.06.21.NAM	Adam Newman David Jarrett	8/1/2018-10/22/2018	City of Windhoek request	OCI	Leading practice and technology evaluation for electrification	Completed
Action Plan development for electrification of peri-urban areas of Windhoek, including coordination with World Bank geospatial efforts Y2.04.06.22.NAM	Adam Newman David Jarrett	5/3/2019-10/11/2019	City of Windhoek request	OCI	Action Plan for electrification	In progress: Activity ongoing. A draft report is expected towards the end of October 2019
Support to Ministry of Energy on implementing electrification and generation plans (NIRP) Y2.04.06.23.NAM	David Jarrett	5/1/2019-6/28/2019	MME request	OCI	Draft TOR for NIRP consultants for MNRE review, approval and procurement	Completed: SAEP assisted the Department of Mines and Energy to develop a TOR for the recruitment of consultants to complete the NIRP. It is anticipated that they will go to market in July 2019

Activity Description	SAEP Activity Manager(s)	Start – End Date	Reasoning / Buy-in	Linkages	Deliverable(s)	Status
ZAMBIA						
Program management support to SIAZ Y2.04.06.01.ZMB	McKinsey	10/1/2018-9/30/2019	SIAZ Request	McKinsey	Bi-monthly Word report in addition to workshop materials, from October 2018 to September 2019	Completed
Accelerate SHS market entry and scale through SIAZ by providing analytical and content support, including: (1) Route to market using the geospatial model. (2) Sales effectiveness training. (3) Mobile-Money Scale-up Y2.04.06.02.ZMB	McKinsey	10/1/2018-9/30/2019	SIAZ and PSPs request		(1) Quarterly word document detailing major analyses and impact / decisions taken by players based on the analyses. (2) Sales curriculum materials by December 2018. Scale-up plan and delivery across the country for 2019 (in waves). (3) Report on engagement between SIAZ and Telco players by November 2018 (with further interventions subject to these discussions in 2019)	Completed: All SFE training has been completed
Off-Grid Task Force: Content support (e.g., to select sub-committees of this task force, starting with the fiscal exemptions committee (building on the work started in Year 1) and consumer financing) Y2.04.06.03.ZMB	McKinsey	1/1/2019-7/15/2019	Ministry and Cooperating Partner requests		(1) Word document, outlining quarterly meeting outcomes and proposed areas of intervention for SAEP in upcoming discussions as well as analysis conducted. (2) Donor & stakeholder meeting notes	Completed: Support to the OGTF will continue into Year 3. At the end of Year 2, SAEP had developed material for training boarder officials to correctly identify tax exempt SHS products at points of entry and mitigate any risk of delays that could be caused by customs issues. The training will be rolled out to a limited number of sites in October 2019
Off-Grid Task Force (Enabling environment) - Program Management Support to help the Off-Grid Task Force secretariat, in close collaboration with REEEP to structure, prioritize and track initiatives Y2.04.06.04.ZMB	McKinsey	10/1/2018-9/30/2019	Ministry and Cooperating Partner requests		(1) Word document, outlining quarterly meeting outcomes and proposed areas of intervention for SAEP in upcoming discussions as well as analysis conducted. (2) Donor & stakeholder meeting notes	Completed
Off-Grid Task Force (Content Support): Fiscal exemptions implementation support, including provide training to ZRA agents on the new exemptions policy at the main SHS import border posts Y2.04.06.05.ZMB	McKinsey	11/1/2018-9/30/2019	Ministry and Cooperating Partner requests		(1) Budget approval (and summary report of such approval) (2) ZRA agent training materials and delivery of the training (3) Report summarizing the ZRA agent training	Completed
Intervention 4.07						

Activity Description	SAEP Activity Manager(s)	Start – End Date	Reasoning / Buy-in	Linkages	Deliverable(s)	Status
REGIONAL						
SACREEE procurement program leading practices paper Y2.04.07.01.REG	Ria Govender	months after response from SACREEE on potential update	SACREEE request	OC5	(1) See the description below for procurement training. These two items will be combined if possible (2) Report and / or toolkit for countries in the region to use	On hold

Outcome 5

Activity Description	SAEP Activity Manager(s)	Start – End Date	Reasoning / Buy-in	Linkages	Deliverable(s)	Status
Intervention 5.01						
REGIONAL						
Develop knowledge management process and, if necessary, tracker / system Y2.05.01.01.REG	Lana Nwosu	10/1/2018-1/2/2019	Leading practice	Cross-cutting	SOP of knowledge management process	Completed: SAEP has a knowledge hub that contains the repository of all information. This has been completed
SAEP Leading Practice Learning Guides Y2.05.01.02.REG	Lana Nwosu Technical Teams	5/6/2019-9/30/2019	Sustainability. Share successes, Lessons Learnt	Cross-cutting	Leading practice learning guides	Completed: Development on a synchronized tracker list for SAEP learning guide
Develop Competitive IPP Procurement leading practice learning guide, highlighting REIPPP experience Y2.05.01.03.REG	Ria Govender	5/6/2019-9/30/2019	Leading practice, Sustainability, Lessons Learned	OC1, OC4	Report and / or toolkit for countries to use	Completed: USAID Policy Makers Guide to Auctions Paper has been shared with SACREEE. Discussions on additional support on regional auctions framework to be provided through USAID Power Africa will be held on 1 December 2019
Battery storage financial modelling and analysis leading practice learning guide Y2.05.01.04.REG	Adam Newman Nick Van Hollen	5/6/2019-9/30/2019	Leading practice, Sustainability, Lessons Learned	OC4	Report and / or learning guide for other countries to use	Completed: Concept approval for Battery storage workshop has been approved and is scheduled for February 2020. Financial model has been initiated and invitation to co-sponsorship with World Bank communicated
Mini-grid financial modelling leading practice learning guide Y2.05.01.05.REG	Lana Nwosu Sri-Sekar	5/6/2019-9/30/2019	Leading practice, Sustainability, Lessons Learned	OC4	Report and / or learning guide for other countries to use	In progress: No report for Q4

Activity Description	SAEP Activity Manager(s)	Start – End Date	Reasoning / Buy-in	Linkages	Deliverable(s)	Status
Intervention 5.02						
MALAWI						
EGENCO Performance Management Capacity Building Activity focused on Operational Training Y2.05.02.07.MWI	Vince Micali	5/17/2019-8/12/2019	EGENCO CEO Request	OC3	Training Materials and Curriculum	In progress: Introductory module prepared for the M&E training planned for 29 July - 2 August 2019. Created change messaging approach to support EGENCO CEO on the utilities transformational journey with the EGENCO team
MOZAMBIQUE						
Conduct TNA survey for EDM and, based off TNA, develop training plan Y2.05.02.02.MOZ	Lana Nwosu	4/22/2019-12/2/2019	SAPP, RERA, SACREEE, SADC utilities / Associations request for assistance, and SAEP requirement	OC2; Cross-cutting	Building capacity within SAPP, RERA, and SACREEE to conduct TNAs and develop institutional action plans	On hold: Activity on hold and in review with management
REGIONAL						
RERA training augmentation (building on Trade Hub work) Y2.05.02.04.REG	Lana Nwosu	8/20/2019-9/30/2019	RERA request. HR Strategies, HRMSC TNA, Women in Energy, ADDIE Process for HRMSC, IPP /PPA for Professionals	Cross-cutting	Two training e-learning modules	Completed: The e-learning module was launched at the RERA conference on September 2019, after which it was handed over to RERA and was accepted. RERA will start the training of its members on the e-module
Operational guideline training and support for SACREEE Y2.05.02.05.REG	Lana Nwosu Jorry Mwenechanya	2/4/2019-9/30/2019			(1) Training materials (2) Operational guidelines document	In progress: SACREEE's first draft rules, procedures and operational guidelines was endorsed and supported by SADC steering committee on 4 October 2019. There was a request by the steering committee to extend completion until end of October in order to allow for additional comments from SADC member states
Work with Outcome Leads to identify trainings that align with	Lana Nwosu	10/1/2018-9/30/2019		Cross-cutting	(1) Training materials, participant sheets, training assessments (2) There will be a focus on creating more	Completed: The Year 2 observation and lessons learned report on training was

Activity Description	SAEP Activity Manager(s)	Start – End Date	Reasoning / Buy-in	Linkages	Deliverable(s)	Status
existing activities and are catalytic to activity implementation Y2.05.02.06.REG					real-world case study/demonstration trainings where workshops and trainings are conducted as technical assistance is provided	completed. This is an ongoing activity and will continue into Year 3
ZAMBIA						
ZESCO Skills Building Support Y2.05.02.08.ZMB	Lana Nwosu	10/1/2019-4/7/2020	ZESCO LOC		Training materials	Moved to Year 3: Scope of Work draft completed
Intervention 5.03						
MOZAMBIQUE						
Human centered design Pilots in Mozambique EMU Y2.05.03.01.MOZ	Lana Nwosu	8/1/2019-9/30/2019	Human Centered Design		Stakeholder report	Moved to Year 3: Review of Scope of Work with EDM. Tasks endorsed for roll out with EDM. Initial engagement to schedule SAEP HCD Training for key staff

PMO AND CROSS CUTTING–SPECIFIC ACTIVITIES

Below are the PMO- and Cross-Cutting- specific activities are from the Year 2 Work Plan. Any activities that are direct replications of the above Outcome-specific activities have been excluded from the below table. This table is to track the status of the activities and to highlight any activity changes, timing changes or other major items related to activities that SAEP would like to highlight for the period.

Activities	SAEP Activity Lead(s)	Start/End Dates	Reasoning / Buy-In	Linkages	Deliverable(s)	Status
Grants / Catalyzing Local Opportunities Fund						
RFA released and then applications reviewed. Award released Y1.PMO.CLF.05	Lorna Jideamah, Technical Review Team	Quarterly		Leading practice	Evaluation documents Grant award	Completed: Grant packages have been submitted for approval to SAEP COR through the Fluxx Portal
RFA for Malawi SHS access grant Y1.PMO.CLF.06	Lorna Jideamah, Jorry Mwenechanya	8/1/2018 – 9/31/2019	Multiple stakeholders have mentioned need	OC4	SAEP tender documents	Completed: Grant packages have been submitted for approval to SAEP COR through the Fluxx Portal

Activities	SAEP Activity Lead(s)	Start/End Dates	Reasoning / Buy-In	Linkages	Deliverable(s)	Status
RFA developed Y1.PMO.CLF.07	Technical Outcome Leads	8/1/2018 – 10/15/2018	Leading practice		RFA	Completed: RFA was released on 1/29/2019
RFA released and then applications reviewed. Award released Y1.PMO.CLF.08	Lorna Jideamah, Technical Review Team	3/1/2019 – 6/30/2019	Leading practice		Evaluation documents Grant award	Completed: Grant packages have been submitted for approval to SAEP COR through the Fluxx Portal
Letter of Interest (LOI) developed and sent out to companies Y1.PMO.CLF.10	Lorna Jideamah, Jorry Mwenechanya	3/1/2019 – 9/30/2019	SAEP concept		Shortlist of organizations	Delayed
RFA developed for shortlisted organizations Y1.PMO.CLF.11	Technical Outcome Leads	7/1/2019-9/30/2019	Leading practice		RFA	Delayed
RFA released and then applications reviewed. Award released Y1.PMO.CLF.12	Lorna Jideamah, Technical Review Team	10/1/2019-12/20/2019	Leading practice		Evaluation documents Grant award	Delayed
Knowledge Management and Reporting						
Send Biweekly Updates Y2.PMO.KMR.01	Albert Ikhile; Helga Wenhold	Biweekly	Contract requirement		Biweekly Updates (every two weeks)	Completed for period. Ongoing
Draft and Submit Integrated Annual Work Plan Y2.PMO.KMR.02	Liz Pfeiffer; Albert Ikhile; Jenny Huang	5/22/2019 – 8/30/2019	Contract requirement		Integrated Annual Work Plan (Submitted to COR within 30 days of every subsequent year of period of performance)	Completed last year. Will be completed again in 2019
Review Performance Management and Evaluation Plan (PMEP), and update as necessary Y2.PMO.KMR.03	Albert Ikhile; Lubabalo Banzana	As needed	Contract requirement		Updated PMEP	The approved PMEP was updated with FY19 Q2 achieved numbers on 15 June 2019 The PMEP (Version 5) was approved on 18 January 2019

Activities	SAEP Activity Lead(s)	Start/End Dates	Reasoning / Buy-In	Linkages	Deliverable(s)	Status
Draft and Submit Complete Trip Reports Y2.PMO.KMR.04	Team member completing trip Liz Pfeiffer	Within 1 work week of each trip	Contract requirement		Trip Reports	Completed
Collect/Analyze Data from SAEP Staff, counterparts; Ongoing submissions of datasets/documents to the Development Data Library (DDL) Y2.PMO.KMR.05	Olukunle Ogundele	Ongoing	Contract requirement		Ongoing Submissions of Datasets/Documents to the Development Library	Ongoing
Upload SAEP deliverables onto the USAID Development Experience Clearinghouse (DEC) Y2.PMO.KMR.06	Olukunle Ogundele	Ongoing	Contract requirement		Ongoing Submissions of Deliverables to DEC	Ongoing
Draft and Submit Quarterly Progress Reports; Includes Success Stories and project summary documents Y2.PMO.KMR.07	Albert Ikhile; Helga Wenhold	Quarterly	Contract requirement		Quarterly Progress Reports (within 30 days after the end of each quarter of performance); Success Stories; Project Summary Documents	Completed
Complete Quarterly Update of Power Africa Transaction Tracker (PATT) Y2.PMO.KMR.08	SAEP Transaction Advisors	Quarterly	Contract requirement		Quarterly PATT data entry (within 30 days after the end of each quarter of performance)	Ongoing: Captured the updated SAEP transactions information into the PATT
Draft and Submit Quarterly Financial Reports and Accruals Y2.PMO.KMR.09	Rajiv Weeraratne; Chadd Wish	Quarterly	Contract requirement		Quarterly Financial Reports (Submitted 30 days after the completion of each quarter) and Accruals (Submitted approximately 30 days before the completion of each quarter)	Completed
Draft and Submit Training Report Y2.PMO.KMR.10	Olukunle Ogundele; Lubabalo Banzana	Quarterly	Contract requirement		Participant Training Reports (Submitted Quarterly as part of the Quarterly Report)	Completed

Activities	SAEP Activity Lead(s)	Start/End Dates	Reasoning / Buy-In	Linkages	Deliverable(s)	Status
Draft and Submit Annual Performance Management Reports (Year 1) Y2.PMO.KMR.11	Lubabalo Banzana	10/30/2018	Contract requirement		Performance Management Progress Reports (Submitted within 30 days after end of FY)	Completed
Support Dissemination of Lessons Learned and Successes Across SAEP Countries Y2.PMO.KMR.12	Olukunle Ogundele; Lana Nwosu	Ongoing	Leading practice		Success stories, toolkits, transaction one-pagers	Linked-in page developed. In addition, see OCS
Monitoring and Evaluation						
Document activities and data for M&E indicators and results Y2.PMO.MEL.02	Lubabalo Banzana; Technical Teams	Ongoing	Leading practice DQA Assessment		Documentation of M&E results and documentation that results have been verified	Ongoing
Finalize the M&E database and reporting tool based on data quality assessment (DQA) feedback Y2.PMO.MEL.03	Lubabalo Banzana	10/1/2018 – 10/30/2018	Leading practice		Internet-accessible M&E reporting and analysis tool	Completed
Draft and Submit Quarterly Progress Reports M&E data update Y2.PMO.MEL.04	Lubabalo Banzana	Quarterly	Contract requirement		Quarterly Progress Reports M&E status	Completed Submitted the FY19 Q2 DIS report to USAID on the 14 May, 2019
Gender						
Explore opportunities to support women-owned companies in electrification efforts Y2.PMO.GEN.01 / Y1.PMO.GEN.03	Edith Wanjohi	7/15/2017 – Ongoing	Leading practice	OC4.06, OC4.07	Training materials and training workshops	In progress: Conducted gender mainstreaming training workshop for Vitalite Sales and Marketing, Innovation and HR team in April 2019. As a result, the female marketing officer has since been promoted to a management position
Utility Gender Mainstreaming Toolkit EGENCO Y2.PMO.GEN.02	Edith Wanjohi	4/1/2018-30/10/2020	Leading practices	OC5	Gender mainstreaming toolkit	In progress: The Gender Specialist has developed Gender Self-Assessment questionnaire and guidelines

Activities	SAEP Activity Lead(s)	Start/End Dates	Reasoning / Buy-In	Linkages	Deliverable(s)	Status
						that will form part of section I of the gender mainstreaming toolkit. The gender mainstreaming implementation phase of the toolkit will be developed in Q4
Integrate gender into grant selection criteria factoring women empowerment, evaluation and reporting Y2.PMO.GEN.10	Edith Wanjohi	10/15/2018-12/12/2020	SAEP proposal	OC5	Gender criteria for grants guidelines	In progress: The Gender Specialist has continued to support the Kick-Starter grant awards with gender specific requirements into the selection criteria process
Support women entrepreneurs in energy supply chain EGENCO, ZESCO Y2.PMO.GEN.13	Edith Wanjohi	3/01/2019-9/30/2019	SAEP proposal	OC5	Training materials Training workshops Reports	In progress: The Gender Specialist has started conversations with both EGENCO and ZESCO. An update with actual deliverables will be provided in Q4
Gender analytics on data from off-grid programs Y2.PMO.GEN.14	Edith Wanjohi	3/1/2019-30/4/2019	SAEP Proposal	OC4	Training materials and training workshops	This activity is completed
Gender baselining of Southern Africa regional institutions Y2.PMO.GEN.12	Edith Wanjohi	4/30/2019-9/30/2019	SADC Secretariat	OC3	SOW, baselining guidelines, training workshops, gender-specific indicators Report	In progress. The Gender Specialist has shared the SOW with the SADC Secretariat. First meeting will take place on 19 August 2019
Gender-sensitive indicators into institutional benchmarking Y2.PMO.GEN.11	Edith Wanjohi	3/1/2019-9/30/2019	Leading Practice	OC5	Gender sensitive indicators into institutional benchmarking (KPI's)	In progress. The Gender Specialist provides support to OC5 and consultants working with EGENCO to develop BSC KPIs
Women-owned business EGENCO Y2.PMO.GEN.06	Edith Wanjohi	3/1/2019-9/30/2019	SAEP proposal		Gender analysis report with number of women-owned companies listed in the procurement value chain	In progress: The Gender Specialist has been in touch with the Procurement department in EGENCO. A meeting has been arranged with the department for 26 – 30 August 2019 when she will be undertaking the GESI process in EGENCO

Activities	SAEP Activity Lead(s)	Start/End Dates	Reasoning / Buy-In	Linkages	Deliverable(s)	Status
Engendering Utility Develop hiring policies, retention and advancement for female employees Y2.PMO.GEN.05	Edith Wanjohi	3/1/2019-9/30/2019	SAEP proposal		Training materials Training workshops Reports	In progress. Gender Specialist has continued advising, mentoring EGENCO gender advisor on gender mainstreaming. She will continue to support the gender advisor and the HR manager on how to incorporate gender in hiring and retention to attract more women in the utility
Communication and Outreach						
Branding and Marketing Plan updates as required Y2.PMO.COM.01	Helga Wenhold	6/30/2017 – Ongoing	Leading practice		Revisions to Branding and Marketing Plan	In progress
Success stories and transactions lessons learned Y2.PMO.COM.02	Helga Wenhold	Ongoing (Quarterly)	Leading practice		Publish at least 5 success stories or project highlights	Two success stories approved in Q2 FY19: Mpatamanga JDA and Zambia Sales Force Effectiveness Training
Press releases Y2.PMO.COM.03	Helga Wenhold	Ongoing	Leading practice		Publish 3 press releases or as many as needed	No press release in Q3; visibility created through social media posts
Roll out of social media sites for SAEP Y2.PMO.COM.04	Helga Wenhold	03/01/2019 – 07/01/2019	Leading practice		Create an SAEP LinkedIn profile	LinkedIn page concept approved by USAID; development in progress. Will be launched in July 2019
Regular updating of social media and sending content to USAID and Power Africa Y2.PMO.COM.05	Helga Wenhold	Ongoing	Leading practice		Social media write ups for content feeding into existing platforms	In progress: Use Power Africa and USAID social media platforms (Twitter and Facebook) to publish successes / key outcomes on a monthly basis
Preparations, speaker notes and other preparation for events	Helga Wenhold	Ongoing as needed	Leading practice		Event preparation materials	Prepared scene setter and speaking notes for USAID and

Activities	SAEP Activity Lead(s)	Start/End Dates	Reasoning / Buy-In	Linkages	Deliverable(s)	Status
						Power Africa for the SIAZ launch event on 20 June 2019
Off-grid celebratory event in Zambia at new Zambia office	Helga Wenhold	Q3 2019	Opportunity to bring CPs together		Event preparation, speaking notes for USAID personnel and invitations for participants	Completed. SIAZ Launch event happened on 20 June 2019
Partnerships, Alliances, and Coordination						
Establish Memorandums of Understanding (MOUs) or other partnership agreements with SACREEE Y2.PMO.PRT.02	Jorry Mwenechanya, Tshego Neeuwfan	TBD	SACREEE request		MOUs or partnership agreement documents	Signed LOC on Partnership Agreement with SACREE.
Attend events, speak at and provide support to RE associations Y2.PMO.PRT.04	Jorry Mwenechanya; Liz Pfeiffer	Ongoing	Leading practice		Presentations and other preparation materials	SAEP attended Power Africa Coordinator Meeting and presented
Establish Memorandums of Understanding (MOUs) or other partnership agreements with SACREEE Y2.PMO.PRT.02	Jorry Mwenechanya, Tshego Neeuwfan	TBD	SACREEE request		MOUs or partnership agreement documents	Signed LOC on Partnership Agreement with SACREE
Environmental Compliance and Climate Resilience						
Quarterly review of Environmental Compliance Y2.PMO.ENV.01	Taryn Bigwood	Quarterly	Contractual requirement		EMMP quarterly update as required	Ongoing
TA on project development documents as required by transactions Y2.PMO.ENV.02	Taryn Bigwood	As required	Leading practice		EIAs and other project deal documents as required	Ongoing
Assistance with environmental requirements on grants; review of grant applications for environmental considerations Y2.PMO.ENV.04	Taryn Bigwood	As needed	Leading practice		Environmental criteria for grant TOR Grant evaluation form	Ongoing

Activities	SAEP Activity Lead(s)	Start/End Dates	Reasoning / Buy-In	Linkages	Deliverable(s)	Status
Administration and Operations						
Coordinate program administration and operations between the Pretoria office, Lusaka office, and DC office Y2.PMO.OPS.01	Rajiv Weeraratne; Chadd Wish	Ongoing	Required		Program administration and operations support	Ongoing
Support program financial management Y2.PMO.OPS.02	Rajiv Weeraratne; Chadd Wish	Ongoing	Required		Program financial management support	Ongoing
Quarterly Financial Updates Y2.PMO.OPS.03	Rajiv Weeraratne; Chadd Wish	Quarterly	Required		Quarterly Financial Report (submitted with the quarterly report)	Ongoing
Onboard new resources and submit required approvals to USAID Y2.PMO.OPS.04	Rajiv Weeraratne; Chadd Wish	Ongoing	Required		Resource CV, Biodata, and SoW submitted to USAID and received USAID concurrence	Ongoing
Develops Travel Authorization Requests and submit for approval Y2.PMO.OPS.05	Rajiv Weeraratne; Chadd Wish	Ongoing	Required		TARs submitted to USAID for approval	Ongoing
Procurement support for personnel and office materials Y2.PMO.OPS.06	Rajiv Weeraratne; Chadd Wish	Ongoing	Required		Procurement documents	Ongoing
Annual staff compliance trainings or verification Y2.PMO.OPS.07	Rajiv Weeraratne; Chadd Wish	Annual	Required		Confirmation from staff of annual compliance updates	Ongoing
Annual staff performance management evaluation Y2.PMO.OPS.08	Rajiv Weeraratne; Chadd Wish	Annual	Required		Performance management documentation	Ongoing

APPENDIX J SAEP YEAR 3 QUARTERLY TARGETS

SAEP YEAR 3 QUARTERLY TARGETS						
#	Indicator	Q1 FY20	Q2 FY20	Q3 FY20	Q4 FY20	Year 3 Total
New Generation/Transaction Indicators						
1 / PA1	(#AA) Capacity (MW) from Transactions Supported by SAEP that Achieved Financial Closure (4.8.2-33 and PA)	1,100	192	15	0	1,307
	Number of Transactions Reached Financial Closure (PA)	2	1	1	0	4
<p>FY 2020 Target: 1,307 MW and 4 transactions</p> <p>The transactions included in the target are those that have high likelihood to reach financial close at the set date in FY 2020.</p> <p>SAEP supported transactions with high likelihood to reach FC at set date</p> <ul style="list-style-type: none"> • Mozambique–Malawi Interconnector 1000 MW. Est. FC date: 12/2019 • Themis Sahofika 192 MW. Est. FC date: 03/2020 • Redstone Solar Thermal Power project 100 MW. Est. FC date: 07/2019 (but will be counted in Q1 FY20 due to documentation collection needs) • SEC Lavumisa 15 MW. Est. FC date: 06/2020 						
2 / PA2	Generation and Transmission capacity (MW) pending financial closure (PA)	11,478.50	11,478.50	11,478.50	11,478.50	11,478.50
	Gx MW pending financial close	7,713.12	7,521.12	7,301.12	7,301.12	7,301.12
	Gx MW reached financial close	2,265.38	2,457.38	2,677.38	2,677.38	2,677.38
	Gx Total	9,978.50	9,978.50	9,978.50	9,978.50	9,978.50
	Tx MW pending financial close	500	500	500	500	500
	Tx MW reached financial close	1,000	1,000	1,000	1,000	1,000
	Tx Total	1,500	1,500	1,500	1,500	1,500
<p>FY 2020 Target: 11,478.50 MW</p> <p>11,478.50 MW is made up of the 84 transactions which also includes those that have already reached financial close (2,265.38 MW). From the 84 transaction, 57 are currently in the pipeline and have not yet reached financial close. From the 57 transaction in the pipeline, two are for Transmission (1,500 MW) and the remaining 55 are for Generation (7,713.12 MW).</p>						

SAEP YEAR 3 QUARTERLY TARGETS

#	Indicator	Q1 FY20	Q2 FY20	Q3 FY20	Q4 FY20	Year 3 Total	Notes
PA5	Number of Transactions Pending Financial Closure (PA)	57	57	57	57	57	FY 2020 New Target: 57 There are 57 transactions that are currently in the pipeline, these exclude the transactions that have reached financial close.
3 / PA3	Generation Capacity (MW) Commissioned (PA)	60	297.32	810.36	75	1,242.68	FY 2020 Target: 1,242.68 MW from 16 transactions. The following transactions are expected to be commissioned in FY 2020: Quarter 1 <ul style="list-style-type: none"> Salima Solar 60 MW: 12/2019 Quarter 2 <ul style="list-style-type: none"> Aggeneys Solar 40 MW: 03/2020 Excelsior Wind 31.9 MW: 03/2020 Golden Valley Wind I 17.7 MW: 03/2020 Konkoonsies II Solar 75 MW: 03/2020 Wesley-Ciskei Wind Project 32.7 MW: 03/2020 Quarter 3 <ul style="list-style-type: none"> Copperton Wind Farm 102 MW: 06/2020 Dyason Klip 1 75 MW: 06/2020 Dyason Klip 2 75 MW: 06/2020 Kangnas Wind Farm 136.7 MW: 06/2020 Loerisfontein Orange 75 MW: 06/2020 Ngodwana Energy Project 25 MW: 06/2020 Nxuba Wind Farm 138.9 MW: 06/2020 Perdekraal East Wind Farm 107.8 MW: 06/2020 Sirius Solar PV Project One 75 MW: 06/2020 Quarter 4 <ul style="list-style-type: none"> Droogfontein 2 Solar Park 75 MW: 07/2020
PA4	Number of Transactions Commissioned (PA)	1	5	9	1	16	
Access Indicators							
5 / PA11	(#AB) Direct Electricity Access (PA)	175,184	191,657	230,232	308,307	905,380	FY 2020 New Target: 905,380 Off-Grid: (345,380) <ul style="list-style-type: none"> Madagascar: 17,602 Malawi: 54,576

SAEP YEAR 3 QUARTERLY TARGETS

#	Indicator	Q1 FY20	Q2 FY20	Q3 FY20	Q4 FY20	Year 3 Total	Notes
	Off-Grid	60,184	56,657	95,232	133,307	345,380	<ul style="list-style-type: none"> • Mozambique: 37,200 • Zambia: 236,002
	On-Grid	115,000	135,000	135,000	175,000	560,000	On-Grid: (560,000) <ul style="list-style-type: none"> • Angola: 280,000 • Mozambique: 280,000
4 / PA10	Number of New Grid and Off-Grid Projected Direct Connections (PA)	3,069,149	2,877,492	2,647,260	2,338,954	2,338,954	FY 2020 PMEP Target: 2,338,954 FY 2020 Target: 2,338,954 <i>For the connections moving forward, this does not include connections that have occurred</i> Off-grid: (836,454) <ul style="list-style-type: none"> • Madagascar: 73,286 • Malawi: 233,860 • Mozambique: 62,800 • Zambia: 466,507
	Off-Grid	1,121,649	1,064,992	969,760	836,454	836,454	
	On-Grid	1,947,500	1,812,500	1,677,500	1,502,500	1,502,500	On-grid: (1,502,500) <ul style="list-style-type: none"> • Mozambique EDM: 702,500 • Angola ENDE: 800,000
System Efficiency Indicators							
6 / PA12	Electricity Loss Reduction [Aggregate Losses (PA)]	N/A	N/A	N/A	N/A	N/A	FY 2020 PMEP Target: 0 FY 2020 New Target: 0 SAEP will not be undertaking any activity relating to this indicator in FY 2020 unless the activity with EDM moves forward. If so, this will be baselined for Mozambique

SAEP YEAR 3 QUARTERLY TARGETS							
#	Indicator	Q1 FY20	Q2 FY20	Q3 FY20	Q4 FY20	Year 3 Total	Notes
7 / PA13	EE or Energy Conservation (MVA) (4.8.2-31)	0	0	0	0.40	0.40	Estimated for Eswatini as part of the EWSC activity. Baselines set by country and specific targeted EE initiatives in coordination with utilities in the countries where EE activities are implemented.
Product Indicators							
8 / PA15	(#Y) Number of Laws, Policies, Strategies, Plans, or Regulations Officially Proposed, Adopted, or Implemented (4.8.2-28) (PA)	3	2	0	4	9	<p>FY 2020 PMEP Target: 10 FY 2020 New Target: 9 SAEP is targeting 8 Laws, Policies, Strategies, Plans, or Regulations that will be officially Proposed, Adopted, or Implemented in FY 2020.</p> <p>Quarter 1</p> <ul style="list-style-type: none"> Angola Roadmap for regulator start-up - Y3.01.01.01.ANG ARENE Roadmap for start-up for downstream gas regulation - Y3.01.05.01.MOZ Eswatini Ministry EE Strategy and Action Plan development - Y3.04.05.01.SWA <p>Quarter 2</p> <ul style="list-style-type: none"> Rural Access Fund Guidelines - Y3.04.06.01.SWA LEC Ring-fencing - Y3.02.02.02.LSO <p>Quarter 4</p> <ul style="list-style-type: none"> Support to ERB on ZESCO rate case - Y3.01.01.11.ZMB Regional Quality of Service Plan Guide - Y3.01.01.07.REG Assist the National Energy Regulator of South Africa (NERSA) to develop regulations for South African IPPs - Y3.03.01.03.REG SADC's Protocol on Energy Adopted - Y3.03.01.01.REG
9	Number of Reports, Analysis, Reviews, Action Plans, Tools Developed and Campaigns and Trips	6	10	13	13	42	<p>FY 2019 PMEP Target: 52 FY 2019 New Target: 42 SAEP is targeting 42 Reports, Analysis, Reviews, Action Plans, Tools Developed and Campaigns and Trips Implemented in FY 2020. This is a</p>

SAEP YEAR 3 QUARTERLY TARGETS

#	Indicator	Q1 FY20	Q2 FY20	Q3 FY20	Q4 FY20	Year 3 Total	Notes
	Implemented (Custom)						reduction from the original PMEP target for FY2019 as a result of a consolidation of activities.
Tracking and Capacity Building Indicators							
10	(#X) Percentage of RFP Section F Deliverables Submitted in a Timely Manner (Custom)	100%	100%	100%	100%	100%	FY 2020 PMEP Target: 100% FY 2020 New Target: 100% The following are the deliverables that should be submitted in a timely manner in FY 2020: <ul style="list-style-type: none"> • Bi-Weekly • Quarterly Report • Annual Report • Quarterly Financial Report • Success Stories • Participant Training Report • Quarterly updates to the PATT
11	Number of Institutions with Improved Capacity (4.8.2-14)	3	6	0	0	9	FY 2020 PMEP Target: 17 FY 2020 New Target: 9 Below are the institution targeted for improved capacity for FY 2020. The institutions can only be listed once each year for improved capacity. Some of the Targeted Institutions: <ul style="list-style-type: none"> • MERA • EGenco • EDM • NERSA • ENDE • ESCOM • RNT • SAPP • ZESCO
12	Number of Women in Energy Sector	1	2	2	1	6	FY 2020 PMEP Target: 6 FY 2020 New Target: 6

SAEP YEAR 3 QUARTERLY TARGETS

#	Indicator	Q1 FY20	Q2 FY20	Q3 FY20	Q4 FY20	Year 3 Total	Notes
	Leadership Roles (Custom)						Below are the target institutions for Women in Energy Sector Leadership Roles. Below are the leadership roles that we will be working with: <ul style="list-style-type: none"> • EDM • ESCOM • EGENCO • LEC • RNT
13a	Number of People Receiving Training in Global Clean Energy (4.8.2-6)	26	30	105	428	589	FY 2020 PMEP Target: 150 FY 2020 New Target: 589 (60% males and 40% females) Some of the trainings targeted for the year are: <ul style="list-style-type: none"> • Sales Force Effectiveness • Kickstarter performance management training • 400kv maintenance training ESCOM
	Men	16	18	63	257	353	
	Women	10	12	42	171	236	
13b	Person-Hours of Training (4.8.2-29; MIL 4.4.1-34)	368	800	5,400	24,616	31,184	FY 2019 PMEP Target: 2,000 FY 2019 New Target: 31,184 This indicator is linked to indicator 13a above.
	Men	221	480	3,240	14,770	18,710	
	Women	147	320	2,160	9,846	12,474	
Leverage/ Investment Indicator							
17 / PA18	Total Public and Private Funds Leveraged by USG for Energy projects (USD millions) (MIL 4.4.1-32) (PA)	891.9	968	16	0	1,875.9	FY 2020 PMEP Target: TBD FY 2020 New Target: USD 1,875.9 million coming from 4 transactions. The following transactions are expected to reach FC in FY 2020: SAEP supported transactions with high likelihood to reach FC at set date <ul style="list-style-type: none"> • Mozambique–Malawi Interconnector USD 35 • Themis Sahofika 192 MW USD 968 • Redstone Solar Thermal Power project USD 856.9 • SEC Lavumisa USD 16

SAEP YEAR 3 QUARTERLY TARGETS

#	Indicator	Q1 FY20	Q2 FY20	Q3 FY20	Q4 FY20	Year 3 Total	Notes
Power Africa Tracking Indicators							
PA3	Clean Energy Generation Capacity Installed or Rehabilitated (MWs) (4.8.2-32) & Generation Capacity Commissioned (PA)	60	297.32	810.36	75	1,242.68	<p>FY 2020 PMEP Target: TBD FY 2020 New Target: 1,242.68 MW commissioned from 16 transactions. The following transactions are expected to be commissioned in FY 2020:</p> <p>Quarter 1</p> <ul style="list-style-type: none"> Salima Solar 60 MW: 12/2019 <p>Quarter 2</p> <ul style="list-style-type: none"> Aggeneys Solar 40 MW: 03/2020 Excelsior Wind 31.9 MW: 03/2020 Golden Valley Wind I 17.7 MW: 03/2020 Konkoonsies II Solar 75 MW: 03/2020 Wesley-Ciskei Wind Project 32.7 MW: 03/2020 <p>Quarter 3</p> <ul style="list-style-type: none"> Copperton Wind Farm 102 MW: 06/2020 Dyason Klip 1 75 MW: 06/2020 Dyason Klip 2 75 MW: 06/2020 Kangnas Wind Farm 136.7 MW: 06/2020 Loerisfontein Orange (Sol Cap orange) 75 MW: 06/2020 Ngodwana Energy Project 25 MW: 06/2020 Nxuba Wind Farm 138.9 MW: 06/2020 Perdekraal East Wind Farm 107.8 MW: 06/2020 Sirius Solar PV Project One 75 MW: 06/2020 <p>Quarter 4 Droogfontein 2 Solar Park 75 MW: 07/2020</p>
PA7	National Energy Mix Showing % of MWs from Clean Energy Technologies in Each Country (PA)			N/A			<p>FY 2020 PMEP Target: 0 FY 2020 New Target: 0 Indicator will be tracked. Consistent with PA reporting and sources based on 2016 baseline numbers (or the latest reported).</p>
PA8	Kilometers of Power Lines Reached Financial Close (PA)	218	0	563	0	781	<p>FY 2020 PMEP Target: TBD FY 2020 New Target: 218 km</p> <p>Quarter 1</p> <ul style="list-style-type: none"> Malawi–Mozambique Interconnector – 218 km

SAEP YEAR 3 QUARTERLY TARGETS

#	Indicator	Q1 FY20	Q2 FY20	Q3 FY20	Q4 FY20	Year 3 Total	Notes
							<p>Quarter 2</p> <ul style="list-style-type: none"> TTP – 563 km (June 2020 for transmission FC) (We will be counting the FC for TTP when CTT generation closes in December 2020, but will count the transmission km when the transmission portion reaches FC in June 2020)
PA9	Kilometers of Power Lines Constructed or Rehabilitated (PA)	0	0	0	0	0	<p>FY 2020 PMEP Target: 0 FY 2020 New Target: 0 No transactions were expected to reach COD in FY2020.</p>
PA14	Greenhouse Gas (GHG) Emissions Reduced, Sequestered, and/or avoided (4.8-7) (PA) (thousand tCO2e)	43.2	283.2	771.8	71.4	1169.6	<p>FY 2020 PMEP Target: 0 FY 2020 New Target: 1169.6 Results to be calculated using CLEER tool at the time of commissioning The following transactions are expected to be commissioned in FY 2020 - SAEP will calculate GHG in all quarters:</p> <p>Quarter 1</p> <ul style="list-style-type: none"> Salima Solar 60 MW: 12/2019 (43.2 tCO2e) <p>Quarter 2</p> <ul style="list-style-type: none"> Aggeney's Solar 40 MW: 03/2020 (38.1 tCO2e) Excelsior Wind 31.9 MW: 03/2020 (30.4 tCO2e) Golden Valley Wind 117.7 MW: 03/2020 (112.1 tCO2e) Konkoonsies II Solar 75 MW: 03/2020 (71.4 tCO2e) Wesley-Ciskei Wind Project 32.7 MW: 03/2020 (31.2 tCO2e) <p>Quarter 3</p> <ul style="list-style-type: none"> Copperton Wind Farm 102 MW: 06/2020 (97.2 tCO2e) Dyason Klip 1 75 MW: 06/2020 (71.4 tCO2e) Dyason Klip 2 75 MW: 06/2020 (71.4 tCO2e) Kangnas Wind Farm 136.7 MW: 06/2020 (130.2 tCO2e) Loerisfontein Orange 75 MW: 06/2020 (71.4 tCO2e) Ngodwana Energy Project 25 MW: 06/2020 (23.8 tCO2e) Nxuba Wind Farm 138.9 MW: 06/2020 (132.3 tCO2e) Perdekraal East Wind Farm 107.8 MW: 06/2020 (102.7 tCO2e) Sirius Solar PV Project One 75 MW: 06/2020 (71.4 tCO2e) <p>Quarter 4</p> <ul style="list-style-type: none"> Droogfontein 2 Solar Park 75 MW: 07/2020 (71.4 tCO2e)

SAEP YEAR 3 QUARTERLY TARGETS

#	Indicator	Q1 FY20	Q2 FY20	Q3 FY20	Q4 FY20	Year 3 Total	Notes
PA16	Utilization of Risk Mitigation Tools (PA)	1	1	2	0	4	Same as in 1 / PA1 above
PA17	US Exports Supplied for Clean and Cleaner Energy Projects (PA)			N/A			FY 2020 PMEP Target: No set targets FY 2020 New Target: No set targets This indicator has no set target for FY 2020 but the indicators will be tracked and actuals reported.
PA19	Partner Commitment Tracking (PA)			N/A			FY 2020 PMEP Target: No set targets FY 2020 New Target: No set targets This indicator has no set target for FY 2020 but the indicators will be tracked and actuals reported.